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REC'D 06 AUG 2004

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# THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office

August 04, 2004

THIS IS TO CERTIFY THAT ANNEXED HERETO IS A TRUE COPY FROM  
THE RECORDS OF THE UNITED STATES PATENT AND TRADEMARK  
OFFICE OF THOSE PAPERS OF THE BELOW IDENTIFIED PATENT  
APPLICATION THAT MET THE REQUIREMENTS TO BE GRANTED A  
FILING DATE.

APPLICATION NUMBER: *PCT/US04/06288*

FILING DATE: *February 26, 2004*

RELATED PCT APPLICATION NUMBER: *PCT/US04/09947*

By Authority of the  
COMMISSIONER OF PATENTS AND TRADEMARKS



*P. R. Grant*

P. R. GRANT  
Certifying Officer

**PRIORITY  
DOCUMENT**

SUBMITTED OR TRANSMITTED IN  
COMPLIANCE WITH RULE 17.1(a) OR (b)

DT20 Rec'd PCT/PTO 26 FEB 2004

TRANSMITTAL LETTER TO THE  
UNITED STATES RECEIVING OFFICE

Date	26 February 2004
International Application No.	PCT/US 04/06288
Attorney Docket No.	TPI-350C2

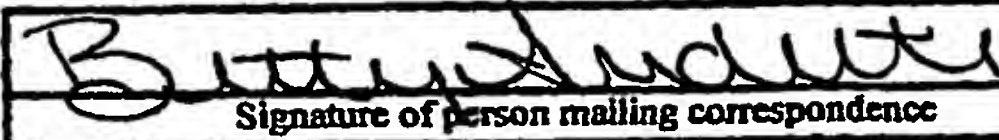
## I. Certification under 37 CFR 1.10 (if applicable)

ER716411538US

26 February 2004

Date of Deposit

I hereby certify that the application/correspondence attached hereto is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to Assistant Commissioner for Patents, Washington, D.C. 20231.



Signature of person mailing correspondence

Betty Audette

Typed or printed name of person mailing correspondence

II. ☒ New International Application

TITLE Pharmaceutical Co-Crystal Compositions

Earliest priority date  
(Day/Month/Year)

28 February 2003

**SCREENING DISCLOSURE INFORMATION:** In order to assist in screening the accompanying international application for purposes of determining whether a license for foreign transmittal should and could be granted and for other purposes, the following information is supplied. (Note: check as many boxes as apply):

- A. ☐ The invention disclosed was not made in the United States.
- B. ☐ There is no prior U.S. application relating to this invention.
- C. ☒ The following prior U.S. application(s) contain subject matter which is related to the invention disclosed in the attached international application. (NOTE: priority to these applications may or may not be claimed on form PCT/RO/101 (Request) and this listing does not constitute a claim for priority.)

application no.	(see attached sheet)	filed on	
application no.		filed on	

- D. ☒ The present international application contains additional subject matter not found in the prior U.S. application(s) identified in paragraph C. above. The additional subject matter is found on pages (throughout) and ☒ DOES NOT ALTER ☐ MIGHT BE CONSIDERED TO ALTER the general nature of the invention in a manner which would require the U.S. application to have been made available for inspection by the appropriate defense agencies under 35 U.S.C. 181 and 37 CFR 5.1. See 37 CFR 5.15

III. ☐ A Response to an Invitation from the RO/US. The following document(s) is(are) enclosed:

- A. ☐ A Request for An Extension of Time to File a Response
- B. ☐ A Power of Attorney (General or Regular)
- C. ☐ Replacement pages:

pages		of the request (PCT/RO/101)	pages		of the figures
pages		of the description	pages		of the abstract
pages		of the claims			

- D. ☐ Submission of Priority Documents

Priority document

Priority document

- E. ☐ Fees as specified on attached Fee Calculation sheet form PCT/RO/101 annex

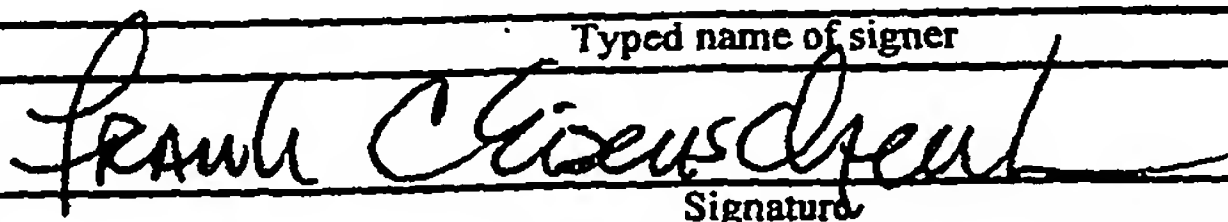
IV. ☐ A Request for Rectification under PCT 91 ☐ A Petition ☐ A Sequence Listing DisketteV. ☒ Other (please specify):

General Powers of Attorney for Transform Pharmaceuticals, Inc.; Univ. of S. Florida; Regents of the Univ. of Mich.; Orn Almarsson; Magali Bourghol Hickey; Matthew Peterson; Michael Zaworotko; Brian Moulton; and Nair Rodriguez-Hornedo

The person  
signing this  
form is the:☐ Applicant☒ Attorney/Agent (Reg. No.)  
45,332☐ Common Representative

Frank C. Eisenschenk, Ph.D.

Typed name of signer



Signature



HOMECOPY

PCT/US04/06288

PCT

REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For receiving Office use only	
PCT/US 04/06288	
International Application No.	
26 FEB 2004	(26.02.04)
International Filing Date	
PCT INTERNATIONAL APPLICATION NO. 04/06288	
Name of receiving Office and the International Application	
Applicant's or agent's file reference (if desired) (12 characters maximum) TPI-350C2	

<b>Box No. I TITLE OF INVENTION</b> Pharmaceutical Co-Crystal Compositions	
<b>Box No. II APPLICANT</b> <input type="checkbox"/> This person is also inventor	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.) TRANSFORM PHARMACEUTICALS, INC. 29 Hartwell Avenue Lexington, MA 02421 US	
Telephone No.	
Facsimile No.	
Teleprinter No.	
Applicant's registration No. with the Office	
State (that is, country) of nationality: US	State (that is, country) of residence: US
This person is applicant for the purposes of: <input type="checkbox"/> all designated States <input checked="" type="checkbox"/> all designated States except the United States of America <input type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box	
<b>Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)</b>	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.) UNIVERSITY OF SOUTH FLORIDA Division of Patents and Licensing 4202 East Fowler Avenue, FAO 126 Tampa, FL 33620-7900 US	
This person is: <input checked="" type="checkbox"/> applicant only <input type="checkbox"/> applicant and inventor <input type="checkbox"/> inventor only (If this check-box is marked, do not fill in below.)	
Applicant's registration No. with the Office	
State (that is, country) of nationality: US	State (that is, country) of residence: US
This person is applicant for the purposes of: <input type="checkbox"/> all designated States <input checked="" type="checkbox"/> all designated States except the United States of America <input type="checkbox"/> the United States of America only <input type="checkbox"/> the States indicated in the Supplemental Box	
<input checked="" type="checkbox"/> Further applicants and/or (further) inventors are indicated on a continuation sheet.	
<b>Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE</b>	
The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as: <input checked="" type="checkbox"/> agent <input type="checkbox"/> common representative	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.) EISENSCHENK, Frank C. Saliwanchik, Lloyd & Saliwanchik A Professional Association 2421 N.W. 41st Street, Suite A-1 Gainesville, FL 32606-6669 US	
Telephone No. 352-375-8100	
Facsimile No. 352-372-5800	
Teleprinter No.	
Agent's registration No. with the Office 45,332	
<input type="checkbox"/> Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.	

## Continuation of Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)

If none of the following sub-boxes is used, this sheet should not be included in the request.

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

THE REGENTS OF THE UNIVERSITY OF MICHIGAN  
Office of Technology Transfer  
Wolverine Tower  
3003 South State St., Suite 2071  
Ann Arbor, MI 48109-1280

This person is:

- ☒ applicant only  
☐ applicant and inventor  
☐ inventor only (If this check-box is marked, do not fill in below.)

Applicant's registration No. with the Office

State (that is, country) of nationality:  
US

State (that is, country) of residence:  
US

This person is applicant for the purposes of:

- ☐ all designated States ☒ all designated States except the United States of America ☐ the United States of America only ☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

ALMARSSON, ÖRN  
22 Farmington Drive  
Shrewsbury, MA 01545  
US

This person is:

- ☐ applicant only  
☒ applicant and inventor  
☐ inventor only (If this check-box is marked, do not fill in below.)

Applicant's registration No. with the Office

State (that is, country) of nationality:  
IS

State (that is, country) of residence:  
US

This person is applicant for the purposes of:

- ☐ all designated States ☐ all designated States except the United States of America ☒ the United States of America only ☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

HICKEY, MAGALI BOURGHOL  
342 Malden Street  
Medford, MA 02155  
US

This person is:

- ☐ applicant only  
☒ applicant and inventor  
☐ inventor only (If this check-box is marked, do not fill in below.)

Applicant's registration No. with the Office

State (that is, country) of nationality:  
US

State (that is, country) of residence:  
US

This person is applicant for the purposes of:

- ☐ all designated States ☐ all designated States except the United States of America ☒ the United States of America only ☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

PETERSON, MATTHEW  
60 Linda Avenue  
Framingham, MA 01701  
US

This person is:

- ☐ applicant only  
☒ applicant and inventor  
☐ inventor only (If this check-box is marked, do not fill in below.)

Applicant's registration No. with the Office

State (that is, country) of nationality:  
US

State (that is, country) of residence:  
US

This person is applicant for the purposes of:

- ☐ all designated States ☐ all designated States except the United States of America ☒ the United States of America only ☐ the States indicated in the Supplemental Box

☒ Further applicants and/or (further) inventors are indicated on another continuation sheet.



## Continuation of Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)

If none of the following sub-boxes is used, this sheet should not be included in the request.

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

ZAWOROTKO, MICHAEL J.  
4202 E. Fowler Ave. (USF30244)  
Tampa, FL 33620  
US

This person is:

- ☒ applicant only  
☐ applicant and inventor  
☐ inventor only (If this check-box is marked, do not fill in below.)

Applicant's registration No. with the Office

State (that is, country) of nationality:

CA

State (that is, country) of residence:

US

This person is applicant for the purposes of:

- ☐ all designated States ☒ all designated States except the United States of America ☐ the United States of America only ☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

MOULTON, BRIAN  
324 Brook Street, Box H  
Providence, RI 02912  
US

This person is:

- ☐ applicant only  
☒ applicant and inventor  
☐ inventor only (If this check-box is marked, do not fill in below.)

Applicant's registration No. with the Office

State (that is, country) of nationality:

CA

State (that is, country) of residence:

US

This person is applicant for the purposes of:

- ☐ all designated States ☐ all designated States except the United States of America ☒ the United States of America only ☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

RODRIGUEZ-HORNEDO, NAIR  
1690 Northbrook Dr.  
Ann Arbor, MI 48103  
US

This person is:

- ☐ applicant only  
☒ applicant and inventor  
☐ inventor only (If this check-box is marked, do not fill in below.)

Applicant's registration No. with the Office

State (that is, country) of nationality:

US

State (that is, country) of residence:

US

This person is applicant for the purposes of:

- ☐ all designated States ☐ all designated States except the United States of America ☒ the United States of America only ☐ the States indicated in the Supplemental Box

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

This person is:

- ☐ applicant only  
☐ applicant and inventor  
☐ inventor only (If this check-box is marked, do not fill in below.)

Applicant's registration No. with the Office

State (that is, country) of nationality:

State (that is, country) of residence:

This person is applicant for the purposes of:

- ☐ all designated States ☐ all designated States except the United States of America ☐ the United States of America only ☐ the States indicated in the Supplemental Box

☐ Further applicants and/or (further) inventors are indicated on another continuation sheet.

## Supplemental Box

If the Supplemental Box is not used, this sheet should not be included in the request.

1. If, in any of the Boxes, except Boxes Nos. VIII(i) to (v) for which a special continuation box is provided, the space is insufficient to furnish all the information: in such case, write "Continuation of Box No. ...." (indicate the number of the Box) and furnish the information in the same manner as required according to the captions of the Box in which the space was insufficient, in particular:

(i) if more than two persons are to be indicated as applicants and/or inventors and no "continuation sheet" is available: in such case, write "Continuation of Box No. III" and indicate for each additional person the same type of information as required in Box No. III. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below;

(ii) if, in Box No. II or in any of the sub-boxes of Box No. III, the indication "the States indicated in the Supplemental Box" is checked: in such case, write "Continuation of Box No. II" or "Continuation of Box No. III" or "Continuation of Boxes No. II and No. III" (as the case may be), indicate the name of the applicant(s) involved and, next to (each) such name, the State(s) (and/or, where applicable, ARIPO, Eurasian, European or OAPI patent) for the purposes of which the named person is applicant;

(iii) if, in Box No. II or in any of the sub-boxes of Box No. III, the inventor or the inventor/applicant is not inventor for the purposes of all designated States or for the purposes of the United States of America: in such case, write "Continuation of Box No. II" or "Continuation of Box No. III" or "Continuation of Boxes No. II and No. III" (as the case may be), indicate the name of the inventor(s) and, next to (each) such name, the State(s) (and/or, where applicable, ARIPO, Eurasian, European or OAPI patent) for the purposes of which the named person is inventor;

(iv) if, in addition to the agent(s) indicated in Box No. IV, there are further agents: in such case, write "Continuation of Box No. IV" and indicate for each further agent the same type of information as required in Box No. IV;

(v) if, in Box No. VI, there are more than three earlier applications whose priority is claimed: in such case, write "Continuation of Box No. VI" and indicate for each additional earlier application the same type of information as required in Box No. VI.

2. If the applicant intends to make an indication of the wish that the international application be treated, in certain designated States, as an application for a patent of addition, certificate of addition, inventor's certificate of addition or utility certificate of addition: in such a case, write the name or two-letter code of each designated State concerned and the indication "patent of addition," "certificate of addition," "inventor's certificate of addition" or "utility certificate of addition," the number of the parent application or parent patent or other parent grant and the date of grant of the parent patent or other patent grant or the date of filing of the parent application (Rules 4.11(a)(iii) and 49bis.1(a) or (b)).

3. If the applicant intends to make an indication of the wish that the international application be treated, in the United States of America, as a continuation or continuation-in-part of an earlier application: in such a case, write "United States of America" or "US" and the indication "continuation" or "continuation-in-part" and the number and the filing date of the parent application (Rules 4.11(a)(iv) and 49bis.1(d)).

## Continuation of Box IV:

SALIWANCHIK, David R.; LLOYD, Jeff; PACE, Doran R.; SANDERS, Jay M.; KYLE, Jean; PARKER, James S.; LADWIG, Glenn P.; EFRON, Margaret H.; and DANIELS, Gwendolyn, L.

THE ABOVE ARE MEMBERS OF THE FIRM OF SALIWANCHIK, LLOYD & SALIWANCHIK, AND HAVE THE SAME ADDRESS AS THE INDIVIDUAL LISTED IN BOX IV.

## Continuation of Box VI:

Filing Date	Country, Regional Office, Appl. No. or Receiving Office
11/09/2003 11 September 2003	US 10/660,202 US
03/03/2003 3 March 2003	PCT/US03/06662 US/RO
02/10/2003 2 October 2003	US 60/508,208 US
06/02/2004 6 February 2004	(not yet received) US
18/04/2003 18 April 2003	US 60/463,962 US
30/05/2003 30 May 2003	US 10/449,307 US
18/03/2003 18 March 2003	US 60/456,027 US
20/06/2003 20 June 2003	US 10/601,092 US
20/06/2003 20 June 2003	PCT/US03/19574 US/RO
24/12/2003 24 December 2003	PCT/US03/41273 US/RO



**Box No. V DESIGNATIONS**

The filing of this request constitutes under Rule 4.9(a), the designation of all Contracting States bound by the PCT on the international filing date, for the grant of every kind of protection available and, where applicable, for the grant of both regional and national patents.

However,

- ☐ DE Germany is not designated for any kind of national protection
- ☐ KR Republic of Korea is not designated for any kind of national protection
- ☐ RU Russian Federation is not designated for any kind of national protection

(The check-boxes above may be used to exclude (irrevocably) the designations concerned in order to avoid the ceasing of the effect, under the national law, of an earlier national application from which priority is claimed. See the Notes to Box No. V as to the consequences of such national law provisions in these and certain other States.)

**Box No. VI PRIORITY CLAIM**

The priority of the following earlier application(s) is hereby claimed:

Filing date of earlier application (day/month/year)	Number of earlier application	Where earlier application is:		
		national application: country or Member of WTO	regional application:* regional Office	international application: receiving Office
item (1) 28/02/2003 28 February 2003	US 60/451,213	US		
item (2) 11/07/2003 11 July 2003	US 60/487,064	US		
item (3) 04/09/2003 04 September 2003	PCT/US03/27772			US/RO

☒ Further priority claims are indicated in the Supplemental Box.

The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) (only if the earlier application was filed with the Office which for the purposes of this international application is the receiving Office) identified above as:

☒ all items ☐ item (1) ☐ item (2) ☐ item (3) ☐ other, see Supplemental Box

\* Where the earlier application is an ARIPO application, indicate at least one country party to the Paris Convention for the Protection of Industrial Property or one Member of the World Trade Organization for which that earlier application was filed (Rule 4.10(b)(ii)): . . . .

**Box No. VII INTERNATIONAL SEARCHING AUTHORITY**

Choice of International Searching Authority (ISA) (if two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used):

ISA / EP

Request to use results of earlier search; reference to that search (if an earlier search has been carried out by or requested from the International Searching Authority):

Date (day/month/year)                      Number                      Country (or regional Office)

**Box No. VIII DECLARATIONS**

The following declarations are contained in Boxes Nos. VIII (i) to (v) (mark the applicable check-boxes below and indicate in the right column the number of each type of declaration):

		Number of declarations
<input type="checkbox"/> Box No. VIII (i)	Declaration as to the identity of the inventor	:
<input type="checkbox"/> Box No. VIII (ii)	Declaration as to the applicant's entitlement, as at the international filing date, to apply for and be granted a patent	:
<input type="checkbox"/> Box No. VIII (iii)	Declaration as to the applicant's entitlement, as at the international filing date, to claim the priority of the earlier application	:
<input type="checkbox"/> Box No. VIII (iv)	Declaration of inventorship (only for the purposes of the designation of the United States of America)	:
<input type="checkbox"/> Box No. VIII (v)	Declaration as to non-prejudicial disclosures or exceptions to lack of novelty	:

## Box No. IX CHECK LIST; LANGUAGE OF FILING

This international application contains:		This international application is accompanied by the following item(s) (mark the applicable check-boxes below and indicate in right column the number of each item):		Number of items
(a) in paper form, the following number of sheets:		1. <input checked="" type="checkbox"/> fee calculation sheet	:	1
request (including declaration sheets)	: 6	2. <input type="checkbox"/> original separate power of attorney	:	
description (excluding sequence listing and/or tables related thereto)	: 434	3. <input type="checkbox"/> original general power of attorney	:	
claims	: 70	4. <input checked="" type="checkbox"/> copy of general power of attorney; reference number, if any: from applicants and inventors. ....	:	9
abstract	: 1	5. <input type="checkbox"/> statement explaining lack of signature	:	
drawings	: 56	6. <input type="checkbox"/> priority document(s) identified in Box No. VI as item(s): .....	:	
Sub-total number of sheets	: 567	7. <input type="checkbox"/> translation of international application into (language): .....	:	
sequence listing	:	8. <input type="checkbox"/> separate indications concerning deposited microorganism or other biological material	:	
tables related thereto	:	9. <input type="checkbox"/> sequence listing in computer readable form (indicate type and number of carriers)	:	
(for both, actual number of sheets if filed in paper form, whether or not also filed in computer readable form; see (c) below)		(i) <input type="checkbox"/> copy submitted for the purposes of international search under Rule 13ter only (and not as part of the international application)	:	
Total number of sheets	: 567	(ii) <input type="checkbox"/> (only where check-box (b)(i) or (c)(i) is marked in left column) additional copies including, where applicable, the copy for the purposes of international search under Rule 13ter	:	
(b) <input type="checkbox"/> only in computer readable form (Section 801(a)(i))		(iii) <input type="checkbox"/> together with relevant statement as to the identity of the copy or copies with the sequence listing mentioned in left column	:	
(i) <input type="checkbox"/> sequence listing		10. <input type="checkbox"/> tables in computer readable form related to sequence listing (indicate type and number of carriers)	:	
(ii) <input type="checkbox"/> tables related thereto		(i) <input type="checkbox"/> copy submitted for the purposes of international search under Section 802(b-quater) only (and not as part of the international application)	:	
(c) <input type="checkbox"/> also in computer readable form (Section 801(a)(ii))		(ii) <input type="checkbox"/> (only where check-box (b)(ii) or (c)(ii) is marked in left column) additional copies including, where applicable, the copy for the purposes of international search under Section 802(b-quater)	:	
(i) <input type="checkbox"/> sequence listing		(iii) <input type="checkbox"/> together with relevant statement as to the identity of the copy or copies with the tables mentioned in left column	:	
(ii) <input type="checkbox"/> tables related thereto		11. <input checked="" type="checkbox"/> other (specify): Transmittal Letter to the US/RO .....	:	1
Type and number of carriers (diskette, CD-ROM, CD-R or other) on which are contained the				
<input type="checkbox"/> sequence listing: .....				
<input type="checkbox"/> tables related thereto: .....				
(additional copies to be indicated under items 9(ii) and/or 10(ii), in right column)				
Figure of the drawings which should accompany the abstract:	None	Language of filing of the international application:	English	

## Box No. X SIGNATURE OF APPLICANT, AGENT OR COMMON REPRESENTATIVE

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).

 2/26/04  
Frank C. Eisenschenk, Ph.D. Date

For receiving Office use only		2. Drawings: <input type="checkbox"/> received:  <input type="checkbox"/> not received:
1. Date of actual receipt of the purported international application:	DT20 Rec'd PCT/PTO 26 FEB 2004	
3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application:		
4. Date of timely receipt of the required corrections under PCT Article 11(2):		
5. International Searching Authority (if two or more are competent): ISA /	6. <input type="checkbox"/> Transmittal of search copy delayed until search fee is paid	

For International Bureau use only
Date of receipt of the record copy by the International Bureau:



PCT

GENERAL POWER OF ATTORNEY

The undersigned person(s):

Transform Pharmaceuticals, Inc.  
29 Hartwell Avenue  
Lexington, MA 02421  
US

hereby appoints(s):

Daniels, Gwendolyn L., Registration No. 51,594; Efron, Margaret, Registration No. 47,545; Eisenschenk, Frank Christopher, Registration No. 45,332; Kyle, Jean, Registration No. 36,987; Ladwig, Glenn P., Registration No. 46,853; Lloyd, Jeff, Registration No. 35,589; Pace, Doran R., Registration No. 38,261; Parker, James S., Registration No. 40,119; Saliwanchik, David R., Registration No. 31,794; and Sanders, Jay M., Registration No. 39,355; of SALIWANCHIK, LLOYD & SALIWANCHIK, A Professional Association, of 2421 N.W. 41<sup>st</sup> Street, Suite A-1, Gainesville, FL 32606-6669 (Telephone: 352-375-8100; Fax: 352-372-5800).

☒ as agent


☐ as common representative

to represent the undersigned before all the competent International Authorities in connection with any and all international applications filed by the undersigned with the following Office: the **United States Patent and Trademark Office (USPTO)** as receiving Office and to make or receive payments on behalf of the undersigned.

Signed at Transform Pharma US, this 28 day of Feb, 2003.

TRANSFORM PHARMACEUTICALS, INC.

Signature

  
John Lucas, Vice President and  
Chief Patent Counsel

PCT

GENERAL POWER OF ATTORNEY

The undersigned person(s):

UNIVERSITY OF SOUTH FLORIDA  
4202 E. Fowler Avenue, FAO 126  
Tampa, FL 33620  
US

hereby appoints(s):

Daniels, Gwendolyn L., Registration No. 51,594; Efron, Margaret, Registration No. 47,545; Eisenschenk, Frank Christopher, Registration No. 45,332; Kyle, Jean, Registration No. 36,987; Ladwig, Glenn P., Registration No. 46,853; Lloyd, Jeff, Registration No. 35,589; Pace, Doran R., Registration No. 38,261; Parker, James S., Registration No. 40,119; Saliwanchik, David R., Registration No. 31,794; and Sanders, Jay M., Registration No. 39,355; and Sanders, John M., Registration No. 30,126; of SALIWANCHIK, LLOYD & SALIWANCHIK, A Professional Association, of 2421 N.W. 41<sup>st</sup> Street, Suite A-1, Gainesville, FL 32606-6669 (Telephone: 352-375-8100; Fax: 352-372-5800).

☒ as agent

☐ as common representative

to represent the undersigned before all the competent International Authorities in connection with any and all international applications filed by the undersigned with the following Office: the **United States Patent and Trademark Office (USPTO)** as receiving Office and to make or receive payments on behalf of the undersigned.

Signed at Tampa, FL, US, this 5th day of May, 2003.

UNIVERSITY OF SOUTH FLORIDA

Signature

Valerie McDevitt

Name

Valerie McDevitt

Title

Interim Director, Division of Patents & Licensing



## UNIVERSITY OF SOUTH FLORIDA

Office of the President

## MEMORANDUM OF DELEGATION

DATE: November 14, 2001

SUBJECT: Delegation of Authority to Execute Documents Necessary  
to Secure Letters of Patent, Copyrights, and Trademarks

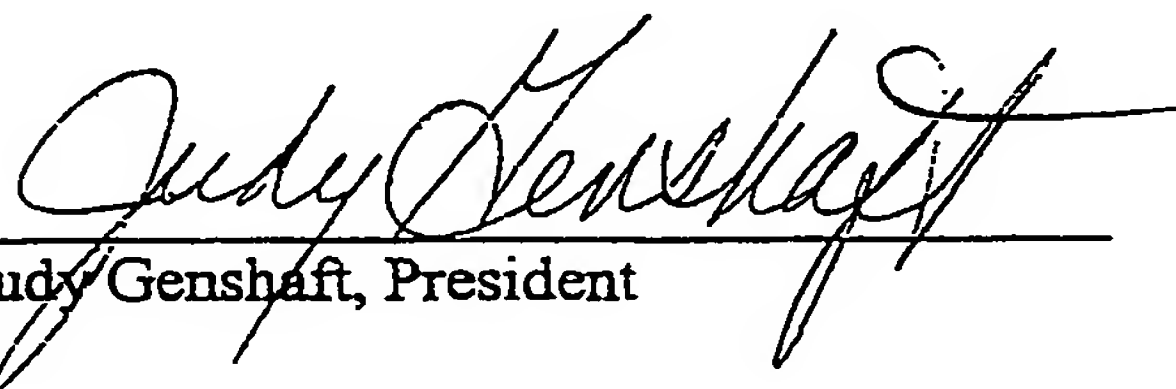

Florida Statutes Section 229.0082 provides in part:

The president is the Chief Executive Officer of the University, shall be Corporate Secretary of the State University Board of Trustees, and is responsible for the operation and administration of the University.

Florida Statutes Section 240.299 (1) provides in part:

Each university is authorized, in its own name, to (1) perform all things necessary to secure letters of patent, copyrights, and trademarks on any work product and to enforce its rights therein.

In accordance with the foregoing statutory provisions, I hereby delegate to the Vice President for Research, the Assistant Vice President for Research, and the Director of the Division of Patents and Licensing of the University of South Florida the authority to sign any and all documents necessary to secure letters of patent, copyrights, and trademarks on any work products and to enforce its rights therein. The above-described authority to execute instruments may not be further delegated.

  
Judy Genshaft, PresidentAPPROVED AS TO  
FORM AND LEGALITY  
HENRY W. LAVANDERA

## PCT

## GENERAL POWER OF ATTORNEY

The undersigned person(s):

The Regents of the University of Michigan  
3003 S. State Street, Suite 2071  
Ann Arbor, MI 48109  
US

hereby appoints(s):

Daniels, Gwendolyn L., Registration No. 51,594; Efron, Margaret, Registration No. 47,545; Eisenschenk, Frank Christopher, Registration No. 45,332; Kyle, Jean, Registration No. 36,987; Ladwig, Glenn P., Registration No. 46,853; Lloyd, Jeff, Registration No. 35,589; Pace, Doran R., Registration No. 38,261; Parker, James S., Registration No. 40,119; Saliwanchik, David R., Registration No. 31,794; Sanders, Jay M., Registration No. 39,355; and Sanders, John M., Registration No. 30,126; of SALIWANCHIK, LLOYD & SALIWANCHIK, A Professional Association, of 2421 N.W. 41<sup>st</sup> Street, Suite A-1, Gainesville, FL 32606-6669 (Telephone: 352-375-8100; Fax: 352-372-5800).

☒ as agent

☐ as common representative

to represent the undersigned before all the competent International Authorities in connection with any and all international applications filed by the undersigned with the following Office: the **United States Patent and Trademark Office (USPTO)** as receiving Office and to make or receive payments on behalf of the undersigned.

Signed at Ann Arbor, MI, US, this 1 day of December, 2003.  
(City, State)

Name **Ruth L. Rasor**  
Title **Director of Licensing  
UM Technology Transfer**

Signature

Ruth L. Rasor

# TECHtransfer

PCT/US04/00 UNIVERSITY OF MICHIGAN

June 1, 2003

To Whom It May Concern:

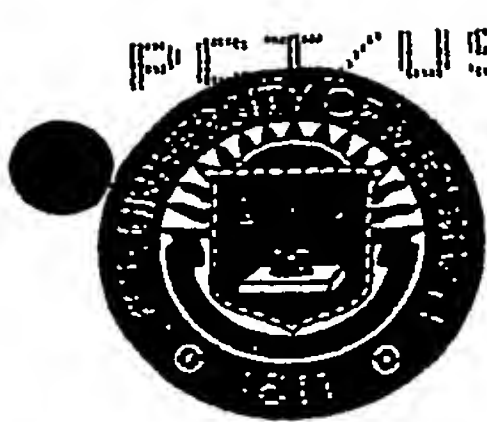
I hereby sub delegate to Ruth Robin L. Rasor my signature authority to execute on behalf of the Regents of the University of Michigan all documents related to the filing, prosecution, and maintenance of United States, PCT, and foreign patents and applications. This delegation includes, for example, entity status documents (U.S.), PCT Requests, powers of attorney, revocations of powers of attorney, declarations of the University as an assignee, and assignment documents.

Sincerely,



Kenneth J. Nisbet  
Executive Director, UM Tech Transfer





THE UNIVERSITY OF MICHIGAN

TIMOTHY P. SLOTTOW  
EXECUTIVE VICE PRESIDENT AND  
CHIEF FINANCIAL OFFICER

3014 FLEMING ADMINISTRATION BUILDING  
503 THOMPSON STREET  
ANN ARBOR, MICHIGAN 48109-1340  
734 764-7272 FAX: 734 936-8730

July 1, 2003

Ms. Elaine L. Brock  
Director  
Medical School Office for Technology Transfer  
and Corporate Research  
The University of Michigan  
Ann Arbor, MI 48109

Mr. Kenneth J. Nisbet  
Director, Technology Management Office  
The University of Michigan  
Ann Arbor, MI 48109

Mr. Marvin G. Parnes  
Associate Vice President for Research &  
Executive Director  
Division of Research Development &  
Administration  
The University of Michigan  
Ann Arbor, MI 48109

RE: Delegation of Authority to Sign University Documents from the Chief Financial Officer  
regarding Technology Transfer

Dear Ms. Brock, Mr. Nisbet & Mr. Parnes:

This delegation of authority to sign University documents supersedes all prior delegations to you concerning the subject matter of this letter and is effective for the period July 1, 2003 through June 30, 2004. Delegations of authority to sign University documents will be renewed on an annual basis.

Pursuant to the authority given to me by section 2.05 and 3.01 of the Regents' Bylaws, as amended, I hereby delegate to you the authority to execute on behalf of the Regents of the University all agreements and documents related to commercialization of intellectual properties including but not limited to the filing, prosecution and maintenance of United States and foreign patents, as described in numbered section (2) of the Regents policy entitled "Policy on Intellectual Properties: Including Their Disclosure, Commercialization, and Distribution of Revenues From Royalties and Sale of Equity Interests" as follows:

**(2) Options for Commercialization**

**(a) Licensing Third Parties**

The University may license University-generated intellectual properties to external entities for further development and commercialization in exchange for a return on resulting revenues. The University will bear the costs of licensing the intellectual property.

RECEIVED

JUL 03 2003

Office of Technology Transfer

Dennis Lind  
Linda Haml  
Robin Rasor  
Jill Cooke  
- K

If the University decides not to protect or license the intellectual property, it may be reassigned to the inventor(s) upon request, in accordance with option (c) below.

**(b) Licensing Employee-Inventor Owned Companies**

The University may enter into license agreements with employee-inventor owned companies. Such licenses will be comparable to those negotiated with unrelated third party licensees. The terms may include royalty payment, equity interest, or a combination thereof, as consideration to the University for the license. The emphasis in structuring license agreements with start-up companies will be on helping the company become viable. Where the inventor-employee chooses to accept the expense and risk of protecting and marketing the technology in lieu of using the University's resources and services to do so, terms which reflect the inventor's increased acceptance of responsibility can be accepted by the University.

**(c) Reassignment of Ownership to Inventors**

Subject to the provisions described in Section 3 (of this policy statement), the University may reassign its ownership of an intellectual property to inventor(s) if the inventor(s) elect to market, protect and license it on their own with minimal University involvement or if the University decides not to protect or license it. Normally, where the inventor desires to commercialize via a business in which the inventor holds a financial or management interest, the option described in (b) above would be used.


The return to the University for reassignment of ownership will consist of recovery of any University patent and licensing expenses plus 15% of royalties, equity or other value received by the inventor(s) through subsequent licensing or reassignment.

In exceptional cases, in order to benefit the University, the Vice President for Research may make modifications in this rate of return for reassignment of ownership.

As to Mr. Parnes and Mr. Nisbet, only, you may subdelegate this authority to other responsible members of your staff in your absence. If there is further subdelegation, it must be made in writing. It will be necessary for you to renew such subdelegation annually in writing and to inform me by a written communication to whom such subdelegation is made.

This delegation shall remain in full force and effect for the above specified period until revoked by me or my successor in writing, by action of the Board of Regents, or by termination of your University of Michigan employment.

Sincerely,

  
Timothy P. Slottow  
SLS

PCT

GENERAL POWER OF ATTORNEY

The undersigned person(s):

Örn Almarsson  
22 Farmington Drive  
Shrewsbury, MA 01545  
US

hereby appoints(s):

Daniels, Gwendolyn L., Registration No. 51,594; Efron, Margaret, Registration No. 47,545; Eisenschenk, Frank Christopher, Registration No. 45,332; Kyle, Jean, Registration No. 36,987; Ladwig, Glenn P., Registration No. 46,853; Lloyd, Jeff, Registration No. 35,589; Pace, Doran R., Registration No. 38,261; Parker, James S., Registration No. 40,119; Saliwanchik, David R., Registration No. 31,794; and Sanders, Jay M., Registration No. 39,355; of SALIWANCHIK, LLOYD & SALIWANCHIK, A Professional Association, of 2421 N.W. 41<sup>st</sup> Street, Suite A-1, Gainesville, FL 32606-6669 (Telephone: 352-375-8100; Fax: 352-372-5800).

☒ as agent


☐ as common representative

to represent the undersigned before all the competent International Authorities in connection with any and all international applications filed by the undersigned with the following Office: the **United States Patent and Trademark Office (USPTO)** as receiving Office and to make or receive payments on behalf of the undersigned.

Signed at TRANSFORM PATENT INC., US, this 4<sup>th</sup> day of March, 2003.

ÖRN ALMARSSON

Signature





PCT

GENERAL POWER OF ATTORNEY

The undersigned person(s):

Magali Bourghol Hickey  
342 Malden Street  
Medford, MA 02155  
US

hereby appoints(s):

Daniels, Gwendolyn L., Registration No. 51,594; Efron, Margaret, Registration No. 47,545; Eisenschenk, Frank Christopher, Registration No. 45,332; Kyle, Jean, Registration No. 36,987; Ladwig, Glenn P., Registration No. 46,853; Lloyd, Jeff, Registration No. 35,589; Pace, Doran R., Registration No. 38,261; Parker, James S., Registration No. 40,119; Saliwanchik, David R., Registration No. 31,794; Sanders, Jay M., Registration No. 39,355; and Sanders, John M., Registration No. 30,126; of SALIWANCHIK, LLOYD & SALIWANCHIK, A Professional Association, of 2421 N.W. 41<sup>st</sup> Street, Suite A-1, Gainesville, FL 32606-6669 (Telephone: 352-375-8100; Fax: 352-372-5800).

☒ as agent

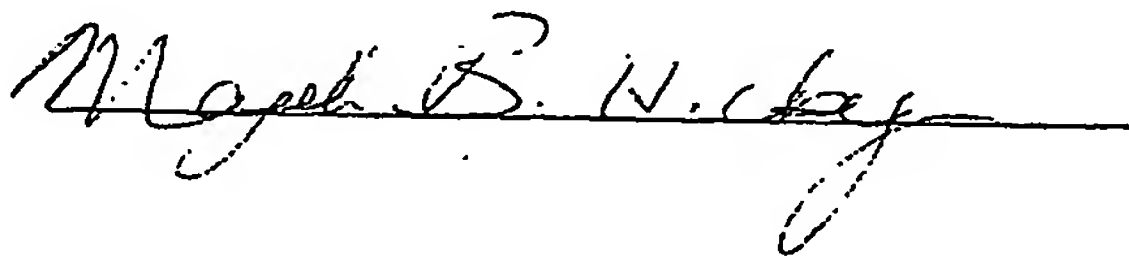
☐ as common representative

to represent the undersigned before all the competent International Authorities in connection with any and all international applications filed by the undersigned with the following Office: the **United States Patent and Trademark Office (USPTO)** as receiving Office and to make or receive payments on behalf of the undersigned.

Signed at Lexington, MA, US, this 24 day of October, 2003.  
(City, State)

Magali Bourghol Hickey

Signature



PCT

GENERAL POWER OF ATTORNEY

The undersigned person(s):

Matthew L. Peterson  
60 Linda Avenue  
Framingham, MA 01701  
US

hereby appoints(s):

Daniels, Gwendolyn L., Registration No. 51,594; Efron, Margaret, Registration No. 47,545; Eisenschenk, Frank Christopher, Registration No. 45,332; Kyle, Jean, Registration No. 36,987; Ladwig, Glenn P., Registration No. 46,853; Lloyd, Jeff, Registration No. 35,589; Pace, Doran R., Registration No. 38,261; Parker, James S., Registration No. 40,119; Saliwanchik, David R., Registration No. 31,794; and Sanders, Jay M., Registration No. 39,355; of SALIWANCHIK, LLOYD & SALIWANCHIK, A Professional Association, of 2421 N.W. 41<sup>st</sup> Street, Suite A-1, Gainesville, FL 32606-6669 (Telephone: 352-375-8100; Fax: 352-372-5800).

☒ as agent

☐ as common representative

to represent the undersigned before all the competent International Authorities in connection with any and all international applications filed by the undersigned with the following Office: the **United States Patent and Trademark Office (USPTO)** as receiving Office and to make or receive payments on behalf of the undersigned.

Signed at \_\_\_\_\_, US, this 28 day of February, 2003.

MATTHEW L. PETERSON

Signature

Matthew L. Peterson

PCT

GENERAL POWER OF ATTORNEY

The undersigned person(s):

Michael J. Zaworotko  
4202 E. Fowler Ave. (USF30244)  
Tampa, FL 33620  
US

hereby appoints(s):

Daniels, Gwendolyn L., Registration No. 51,594; Efron, Margaret, Registration No. 47,545; Eisenschenk, Frank Christopher, Registration No. 45,332; Kyle, Jean, Registration No. 36,987; Ladwig, Glenn P., Registration No. 46,853; Lloyd, Jeff, Registration No. 35,589; Pace, Doran R., Registration No. 38,261; Parker, James S., Registration No. 40,119; Saliwanchik, David R., Registration No. 31,794; Sanders, Jay M., Registration No. 39,355; and Sanders, John M., Registration No. 30,126; of SALIWANCHIK, LLOYD & SALIWANCHIK, A Professional Association, of 2421 N.W. 41<sup>st</sup> Street, Suite A-1, Gainesville, FL 32606-6669 (Telephone: 352-375-8100; Fax: 352-372-5800).

☒ as agent

☐ as common representative

to represent the undersigned before all the competent International Authorities in connection with any and all international applications filed by the undersigned with the following Office: the **United States Patent and Trademark Office (USPTO)** as receiving Office and to make or receive payments on behalf of the undersigned.

Signed at Tampa, Florida US. this 29<sup>th</sup> day of October, 2003  
(City, State)

Signature Michael J. Zaworotko



PCT

GENERAL POWER OF ATTORNEY

The undersigned person(s):

Brian Moulton  
13455 Century Cove Dr. #323  
Temple Terrace, FL 33637  
US

324 Brook St , Box 4  
Providence, RI 02912.

hereby appoints(s):

Daniels, Gwendolyn L., Registration No. 51,594; Efron, Margaret, Registration No. 47,545; Eisenschenk, Frank Christopher, Registration No. 45,332; Kyle, Jean, Registration No. 36,987; Ladwig, Glenn P., Registration No. 46,853; Lloyd, Jeff, Registration No. 35,589; Pace, Doran R., Registration No. 38,261; Parker, James S., Registration No. 40,119; Saliwanchik, David R., Registration No. 31,794; Sanders, Jay M., Registration No. 39,355; and Sanders, John M., Registration No. 30,126; of SALIWANCHIK, LLOYD & SALIWANCHIK, A Professional Association, of 2421 N.W. 41<sup>st</sup> Street, Suite A-1, Gainesville, FL 32606-6669 (Telephone: 352-375-8100; Fax: 352-372-5800).

☒ as agent

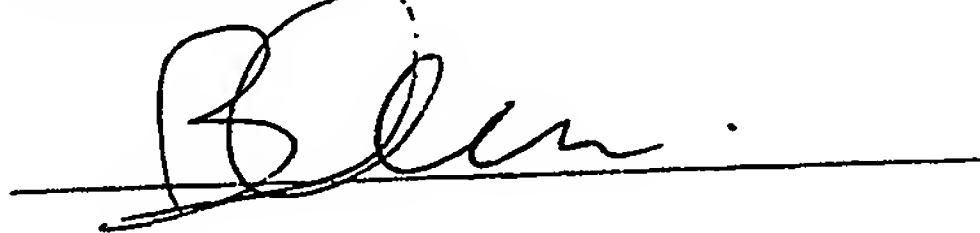
☐ as common representative

to represent the undersigned before all the competent International Authorities in connection with any and all international applications filed by the undersigned with the following Office: the **United States Patent and Trademark Office (USPTO)** as receiving Office and to make or receive payments on behalf of the undersigned.

Signed at Providence, RI US, this 21 day of October, 2000.  
(City, State)

Brian Moulton

Signature



## PCT

### GENERAL POWER OF ATTORNEY

The undersigned person(s):

Nair Rodriguez-Hornedo  
1690 Northbrook Dr.  
Ann Arbor, MI 48103  
US

hereby appoint(s):

Daniels, Gwendolyn L., Reg. No. 51,594; Efron, Margaret, Registration No. 47,545; Eisenschenk, Frank Christopher, Registration No. 45,332; Kyle, Jean, Registration No. 36,987; Ladwig, Glenn P., Registration No. 46,853; Lloyd, Jeff, Registration No. 35,589; Pace, Doran R., Registration No. 38,261; Parker, James S., Registration No. 40,119; Saliwanchik, David R., Registration No. 31,794; and Sanders, Jay M., Registration No. 39,355 of SALIWANCHIK, LLOYD & SALIWANCHIK, A Professional Association, of 2421 N.W. 41st Street, Suite A-1, Gainesville, FL 32606-6669 (Telephone: (352) 375-8100; Fax: (352) 372-5800).

☒ as agent

☐ as common representative

to represent the undersigned before all the competent International Authorities in connection with any and all international applications filed by the undersigned with the following Office: the **United States Patent and Trademark Office (USPTO)** as receiving Office and to receive payments on behalf of the undersigned.

Signed at **Ann Arbor, Michigan, US**, this 28 day of May, 2003.

Nair Rodriguez-Hornedo

Signature: \_\_\_\_\_

Nair Rodriguez-Hornedo

PCT/US 04/06288

This sheet is not part of and does not count as a sheet of the international application.

PCT

FEE CALCULATION SHEET

Annex to the Request

For receiving Office use only

PCT/US 04/06288

International Application No.

26 FEB 2004  
Date stamp of the receiving Office

(26.02.04)

Applicant's or agent's  
file reference

TPI-350C2

Applicant

TRANSFORM PHARMACEUTICALS, INC.

CALCULATION OF PRESCRIBED FEES

1. TRANSMITTAL FEE

300.00 T

2. SEARCH FEE

1,818.00 S

International search to be carried out by

EP

(If two or more International Searching Authorities are competent to carry out the international search, indicate the name of the Authority which is chosen to carry out the international search.)

3. INTERNATIONAL FILING FEE

Where items (b) and/or (c) of Box No. IX apply, enter Sub-total number of sheets } 568  
Where items (b) and (c) of Box No. IX do not apply, enter Total number of sheets }

i1 first 30 sheets 1,035.00 i1

i2 537 x 11.00 = 5,907.00 i2  
number of sheets in excess of 30 fee per sheet

i3 additional component (only if sequence listing and/or tables related thereto are filed in computer readable form under Section 801(a)(i), or both in that form and on paper, under Section 801(a)(ii)):

400 x 0.00 = 0.00 i3  
fee per sheet

Add amounts entered at i1, i2 and i3 and enter total at I 6,942.00 I

(Applicants from certain States are entitled to a reduction of 75% of the international filing fee. Where the applicant is (or all applicants are) so entitled, the total to be entered at I is 25% of the international filing fee.)

4. FEE FOR PRIORITY DOCUMENT (if applicable)

260.00 P

5. TOTAL FEES PAYABLE

9,320.00

Add amounts entered at T, S, I and P, and enter total in the TOTAL box

TOTAL

MODE OF PAYMENT

☒ authorization to charge deposit account (see below)

☐ postal money order

☐ cash

☐ coupons

☐ cheque

☐ bank draft

☐ revenue stamps

☐ other (specify):

AUTHORIZATION TO CHARGE (OR CREDIT) DEPOSIT ACCOUNT

(This mode of payment may not be available at all receiving Offices)

☒ Authorization to charge the total fees indicated above.

☒ (This check-box may be marked only if the conditions for deposit accounts of the receiving Office so permit) Authorization to charge any deficiency or credit any overpayment in the total fees indicated above.

☒ Authorization to charge the fee for priority document.

Receiving Office: RO/ US

Deposit Account No.: 19-0065

Date: 26 February 2004

Name: Frank C. Eisenschenk, PhD

Signature: *Frank C. Eisenschenk*

See Notes to the fee calculation sheet



## PHARMACEUTICAL CO-CRYSTAL COMPOSITIONS

## Cross-Reference to Related Applications

This application is a continuation-in-part of United States Patent Application 10/660,202, filed September 11, 2003 (which claims the benefit of US Provisional Patent Application No. 60/451,213 filed on February 28, 2003; U.S. Provisional Patent Application No. 60/463,962, filed on April 18, 2003; and U.S. Provisional Application No. 60/487,064, filed on July 11, 2003 each of which incorporated herein by reference in its entirety for all purposes.

This application is also a continuation-in-part of PCT US03/27772, filed on September 4, 2003 which is a continuation-in-part of U.S. Patent Application No. 10/378,956, filed March 1, 2003, which claims the benefit of U.S. Provisional Application No. 60/360,768, filed March 1, 2002; said PCT US03/27772 also claims the benefit of US Provisional Patent Application No. 60/451,213 filed on February 28, 2003; U.S. Provisional Patent Application No. 60/463,962, filed on April 18, 2003; and U.S. Provisional Application No. 60/487,064, filed on July 11, 2003 each of which are hereby incorporated by reference in its entirety for all purposes.

Said 10/660,202 and PCT US03/27772 are also continuations-in-part of U.S. Patent Application No. 10/637,829, filed August 8, 2003, which is a divisional of U.S. Patent Application No. 10/295,995, filed November 18, 2002, which is a continuation of U.S. Patent Application No. 10/232,589, filed September 3, 2002, which claims the benefit of US Provisional Patent Application No. 60/406,974, filed August 30, 2002 and US Provisional Patent Application No. 60/380,288, filed May 15, 2002 and US Provisional Patent Application No. 60/356,764, filed February 15, 2002 each of which are hereby incorporated by reference in its entirety for all purposes.

Said 10/660,202 and PCT US03/27772 are also continuations-in-part of US Patent Application No. 10/449,307, filed May 30, 2003 which claims the benefit of US Provisional Patent Application No. 60/463,962 filed April 18, 2003 and US Provisional Patent Application No. 60/444,315, filed January 31, 2003 and US Provisional Patent Application No. 60/439,282 filed January 10, 2003 and US Provisional Patent Application No. 60/384,152, filed May 31, 2002 each of which are hereby incorporated by reference in its entirety for all purposes.

Said 10/660,202 and PCT US03/27772 are also continuations-in-part of US Patent Application No. 10/601,092, filed June 20, 2003, which claims the benefit of US Provisional Patent Application No. 60/451,213, filed February 28, 2003 each of which are hereby incorporated by reference in its entirety for all purposes.

This application is also a continuation-in-part of U.S. Patent Application No. 10/637,829, filed August 8, 2003, which is a divisional of U.S. Patent Application No. 10/295,995, filed

November 18, 2002, which is a continuation of U.S. Patent Application No.10/232,589, filed September 3, 2002, which claims the benefit of US Provisional Patent Application No. 60/406,974, filed August 30, 2002 and US Provisional Patent Application No.60/380,288, filed May 15, 2002 and US Provisional Patent Application No. 60/356,764, filed February 15, 2002 each of which are hereby incorporated by reference in its entirety for all purposes.

This application is also a continuation-in-part of US Patent Application No. 10/449,307, filed May 30, 2003 which claims the benefit of US Provisional Patent Application No. 60/463,962 filed April 18, 2003 and US Provisional Patent Application No. 60/444,315, filed January 31, 2003 and US Provisional Patent Application No. 60/439,282 filed January 10, 2003 and US Provisional Patent Application No. 60/384,152, filed May 31, 2002 each of which are hereby incorporated by reference in its entirety for all purposes.

This application is also a continuation-in-part of US Patent Application No. 10/601,092, filed June 20, 2003, which claims the benefit of US Provisional Patent Application No. 60/451,213, filed February 28, 2003 each of which are hereby incorporated by reference in its entirety for all purposes.

This application claims benefit of United States Provisional Patent Application 60/508,208, filed October 2, 2003 and United States Provisional Patent Application 60/XXX,XXX, filed February 6, 2004 (Entitled: "Modafinil Compositions"; having Docket TPIP044A+; Magali B. Hickey, Matthew Peterson, Orn Almarsson, and Mark Oliveira) each of which are hereby incorporated by reference in its entirety for all purposes.

This application is also a continuation-in-part of PCT/US03/41273, filed December 24, 2003, which is a continuation in part of PCT/03/19584, filed June 20, 2003, which claims the benefit of U.S. Provisional Application No. 60/390,881, filed on June 21, 2002, U.S. Provisional Application No. 60/426,275, filed on November 14, 2002; U.S. Provisional Application No. 60/427,086 filed on November 15, 2002; U.S. Provisional Application No. 60/429,515 filed on November 26, 2002; U.S. Provisional Application No. 60/437,516 filed on December 30, 2002; and U.S. Provisional Application No. 60/456,027 filed on March 18, 2003 each which are hereby incorporated by reference in its entirety for all purposes.

This application is also a continuation-in-part of United States Patent Application 10/601,092, filed June 20, 2003 which claims the benefit of U.S. Provisional Application No. 60/390,881, filed on June 21, 2002, U.S. Provisional Application No. 60/426,275, filed on November 14, 2002; U.S. Provisional Application No. 60/427,086 filed on November 15, 2002; U.S. Provisional Application No. 60/429,515 filed on November 26, 2002; U.S. Provisional Application No. 60/437,516 filed on December 30, 2002; and U.S. Provisional Application No.

60/456,027 filed on March 18, 2003 each of which are hereby incorporated by reference in its entirety for all purposes.

## FIELD OF THE INVENTION

The present invention relates to co-crystal API-containing compositions, pharmaceutical compositions comprising such APIs, and methods for preparing the same.

## BACKGROUND OF THE INVENTION

Active pharmaceutical ingredients (API or APIs (plural)) in pharmaceutical compositions can be prepared in a variety of different forms. Such APIs can be prepared so as to have a variety of different chemical forms including chemical derivatives or salts. Such APIs can also be prepared to have different physical forms. For example, the APIs may be amorphous, may have different crystalline polymorphs, or may exist in different solvation or hydration states. By varying the form of an API, it is possible to vary the physical properties thereof. For example, crystalline polymorphs typically have different solubilities from one another, such that a more thermodynamically stable polymorph is less soluble than a less thermodynamically stable polymorph. Pharmaceutical polymorphs can also differ in properties such as shelf-life, bioavailability, morphology, vapour pressure, density, colour, and compressibility. Accordingly, variation of the crystalline state of an API is one of many ways in which to modulate the physical properties thereof.

It would be advantageous to have new forms of these APIs that have improved properties, in particular, as oral formulations. Specifically, it is desirable to identify improved forms of APIs that exhibit significantly improved properties including increased aqueous solubility and stability. Further, it is desirable to improve the processability, or preparation of pharmaceutical formulations. For example, needle-like crystal forms or habits of APIs can cause aggregation, even in compositions where the API is mixed with other substances, such that a non-uniform mixture is obtained. It is also desirable to increase or decrease the dissolution rate of API-containing pharmaceutical compositions in water, increase or decrease the bioavailability of orally-administered compositions, and provide a more rapid or more delayed onset to therapeutic effect. It is also desirable to have a form of the API which, when administered to a subject, reaches a peak plasma level faster or slower, has a longer lasting therapeutic plasma concentration, and higher or lower overall exposure when compared to equivalent amounts of the API in its presently-known form. The improved properties discussed above can be altered in a way which is most beneficial to a specific API for a specific therapeutic effect.

## SUMMARY OF THE INVENTION

It has now been found that new co-crystalline forms of APIs can be obtained which improve the properties of APIs as compared to such APIs in a non-co-crystalline state (free acid, free base, zwitter ions, salts, etc.).

Accordingly, in a first aspect, the present invention provides a co-crystal pharmaceutical composition comprising an API compound and a co-crystal former, such that the API and co-crystal former are capable of co-crystallizing from a solid or solution phase under crystallization conditions.

Another aspect of the present invention provides a process for the production of a pharmaceutical composition, which process comprises:

- (1) providing an API which has at least one functional group selected from ether, thioether, alcohol, thiol, aldehyde, ketone, thioketone, nitrate ester, phosphate ester, thiophosphate ester, ester, thioester, sulfate ester, carboxylic acid, phosphonic acid, phosphinic acid, sulfonic acid, amide, primary amine, secondary amine, ammonia, tertiary amine, imine, thiocyanate, cyanamide, oxime, nitrile, diazo, organohalide, nitro, S-heterocyclic ring, thiophene, N-heterocyclic ring, pyrrole, O-heterocyclic ring, furan, epoxide, peroxide, hydroxamic acid, imidazole, and pyridine;
- (2) providing a co-crystal former which has at least one functional group selected from ether, thioether, alcohol, thiol, aldehyde, ketone, thioketone, nitrate ester, phosphate ester, thiophosphate ester, ester, thioester, sulfate ester, carboxylic acid, phosphonic acid, phosphinic acid, sulfonic acid, amide, primary amine, secondary amine, ammonia, tertiary amine, imine, thiocyanate, cyanamide, oxime, nitrile, diazo, organohalide, nitro, S-heterocyclic ring, thiophene, N-heterocyclic ring, pyrrole, O-heterocyclic ring, furan, epoxide, peroxide, hydroxamic acid, imidazole, and pyridine;
- (3) grinding, heating, co-subliming, co-melting, or contacting in solution the API with the co-crystal former under crystallization conditions;
- (4) isolating co-crystals formed thereby; and
- (5) incorporating the co-crystals into a pharmaceutical composition.

A further aspect of the present invention provides a process for the production of a pharmaceutical composition, which comprises:

- (1) grinding, heating, co-subliming, co-melting, or contacting in solution an API compound with a co-crystal former, under crystallization conditions, so as to form a solid phase;



- (2) isolating co-crystals comprising the API and the co-crystal former; and
- (3) incorporating the co-crystals into a pharmaceutical composition.

In a further aspect, the present invention provides a process for the production of a pharmaceutical composition, which comprises:

- (1) providing (i) an API or a plurality of different APIs, and (ii) a co-crystal former or a plurality of different co-crystal formers, wherein at least one of the APIs and the co-crystal formers is provided as a plurality thereof;
- (2) isolating co-crystals comprising the API and the co-crystal former; and
- (3) incorporating the co-crystals into a pharmaceutical composition.

#### Solubility Modulation

In a further aspect, the present invention provides a process for modulating the solubility of an API, which process comprises:

- (1) grinding, heating, co-subliming, co-melting, or contacting in solution the API with a co-crystal former under crystallization conditions, so as to form a co-crystal of the API and the co-crystal former; and
- (2) isolating co-crystals comprising the API and the co-crystal former.

#### Dissolution Modulation

In a further aspect, the present invention provides a process for modulating the dissolution of an API, whereby the aqueous dissolution rate or the dissolution rate in simulated gastric fluid or in simulated intestinal fluid, or in a solvent or plurality of solvents is increased or decreased, which process comprises:

- (1) grinding, heating, co-subliming, co-melting, or contacting in solution the API with a co-crystal former under crystallization conditions, so as to form a co-crystal of the API and the co-crystal former; and
- (2) isolating co-crystals comprising the API and the co-crystal former.

In one embodiment, the dissolution of the API is increased.

#### Bioavailability Modulation

In a further aspect, the present invention provides a process for modulating the bioavailability of an API, whereby the AUC is increased, the time to  $T_{\max}$  is reduced, the length of time the concentration of the API is above  $\frac{1}{2} T_{\max}$  is increased, or  $C_{\max}$  is increased, which process comprises:

- (1) grinding, heating, co-subliming, co-melting, or contacting in solution the API with a co-crystal former under crystallization conditions, so as to form a co-crystal of the API and the co-crystal former; and
- (2) isolating co-crystals comprising the API and the co-crystal former.

#### Dose Response Modulation

In a further aspect the present invention provides a process for improving the linearity of a dose response of an API, which process comprises:

- (1) grinding, heating, co-subliming, co-melting, or contacting in solution an API with a co-crystal former under crystallization conditions, so as to form a co-crystal of the API and the co-crystal former; and
- (2) isolating co-crystals comprising the API and the co-crystal former.

#### Increased Stability

In a still further aspect the present invention provides a process for improving the stability of a pharmaceutical salt, which process comprises:

- (1) grinding, heating, co-subliming, co-melting, or contacting in solution the pharmaceutical salt with a co-crystal former under crystallization conditions, so as to form a co-crystal of the API and the co-crystal former; and
- (2) isolating co-crystals comprising the API and the co-crystal former.

#### Difficult to Salt or Unsaltable Compounds

In a still further aspect the present invention provides a process for making co-crystals of difficult to salt or unsaltable APIs, which process comprises:

- (1) grinding, heating, co-subliming, co-melting, or contacting in solution the API with a co-crystal former under crystallization conditions, so as to form a co-crystal of the API and the co-crystal former; and
- (2) isolating co-crystals comprising the API and the co-crystal former.

#### Decreasing Hygroscopicity

In a still further aspect the present invention provides a method for decreasing the hygroscopicity of an API, which method comprises:

- (1) grinding, heating, co-subliming, co-melting, or contacting in solution the API with a co-crystal former under crystallization conditions, so as to form a co-crystal of the API and the co-crystal former; and
- (2) isolating co-crystals comprising the API and the co-crystal former.

#### Crystallizing Amorphous Compounds

In a still further embodiment aspect the present invention provides a process for crystallizing an amorphous compound, which process comprises:

- (1) grinding, heating, co-subliming, co-melting, or contacting in solution the API with a co-crystal former under crystallization conditions, so as to form a co-crystal of the API and the co-crystal former; and
- (2) isolating co-crystals comprising the API and the co-crystal former.

#### Decreasing Form Diversity

In a still further embodiment aspect the present invention provides a process for reducing the form diversity of an API, which process comprises:

- (1) grinding, heating, co-subliming, co-melting, or contacting in solution the API with a co-crystal former under crystallization conditions, so as to form a co-crystal of the API and the co-crystal former; and
- (2) isolating co-crystals comprising the API and the co-crystal former.

#### Morphology Modulation

In a still further embodiment aspect the present invention provides a process for modifying the morphology of an API, which process comprises:

- (1) grinding, heating, co-subliming, co-melting, or contacting in solution the API with a co-crystal former under crystallization conditions, so as to form a co-crystal of the API and the co-crystal former; and
- (2) isolating co-crystals comprising the API and the co-crystal former.

In a further aspect, the present invention provides a co-crystal composition comprising a co-crystal, wherein said co-crystal comprises an API compound and a co-crystal former. In further embodiments the co-crystal has an improved property as compared to the free form (including a free acid, free base, zwitter ion, hydrate, solvate, etc.) or a salt (which includes salt hydrates and solvates). In further embodiments, the improved property is selected from the group consisting of: increased solubility, increased dissolution, increased bioavailability, increased dose

response, decreased hygroscopicity, a crystalline form of a normally amorphous compound, a crystalline form of a difficult to salt or unsalt compound, decreased form diversity, more desired morphology, or other property described herein.

#### BRIEF DESCRIPTION OF THE DRAWINGS

Figs. 1A-B PXRD diffractograms of a co-crystal comprising celecoxib and nicotinamide, with the background removed and as collected, respectively.

Fig. 2 DSC thermogram for a co-crystal comprising celecoxib and nicotinamide.

Fig. 3 TGA thermogram for a co-crystal comprising celecoxib and nicotinamide.

Fig. 4 Raman spectrum for a co-crystal comprising celecoxib and nicotinamide.

Figs. 5A-B PXRD diffractograms of a co-crystal comprising celecoxib and 18-crown-6, with the background removed and as collected, respectively.

Fig. 6 DSC thermogram for a co-crystal comprising celecoxib and 18-crown-6.

Fig. 7 TGA thermogram for a co-crystal comprising celecoxib and 18-crown-6.

Figs. 8A-B PXRD diffractograms of a co-crystal comprising topiramate and 18-crown-6, with the background removed and as collected, respectively.

Fig. 9 DSC thermogram for a co-crystal comprising topiramate and 18-crown-6.

Figs. 10A-B PXRD diffractograms of a co-crystal comprising olanzapine and nicotinamide (Form I), with the background removed and as collected, respectively.

Fig. 11 DSC thermogram for a co-crystal comprising olanzapine and nicotinamide (Form I).

Fig. 12 PXRD diffractogram of a co-crystal comprising olanzapine and nicotinamide (Form II).

Figs. 13A-B PXRD diffractograms of a co-crystal comprising olanzapine and nicotinamide (Form III), with the background removed and as collected, respectively.

Figs. 14A-D Packing diagrams and crystal structure of a co-crystal comprising olanzapine and nicotinamide (Form III).

Fig. 15 PXRD diffractogram of a co-crystal comprising *cis*-itraconazole and succinic acid.

Fig. 16 DSC thermogram for a co-crystal comprising *cis*-itraconazole and succinic acid.

Fig. 17 PXRD diffractogram of a co-crystal comprising *cis*-itraconazole and fumaric acid.

Fig. 18 DSC thermogram for a co-crystal comprising *cis*-itraconazole and fumaric acid.

Fig. 19 PXRD diffractogram of a co-crystal comprising *cis*-itraconazole and L-tartaric acid.

Fig. 20 DSC thermogram for a co-crystal comprising *cis*-itraconazole and L-tartaric acid.

Fig. 21 PXRD diffractogram of a co-crystal comprising *cis*-itraconazole and L-malic acid.

Fig. 22 DSC thermogram for a co-crystal comprising *cis*-itraconazole and L-malic acid.

Fig. 23 PXRD diffractogram of a co-crystal comprising *cis*-itraconazoleHCl and DL-tartaric acid.



- Fig. 24 DSC thermogram for a co-crystal comprising *cis*-itraconazoleHCl and DL-tartaric acid.
- Fig. 25 PXRD diffractogram of a co-crystal comprising modafinil and malonic acid (Form I).
- Fig. 26 DSC thermogram for a co-crystal comprising modafinil and malonic acid (Form I).
- Fig. 27 Raman spectrum for a co-crystal comprising modafinil and malonic acid (Form I).
- Fig. 28 PXRD diffractogram of a co-crystal comprising modafinil and malonic acid (Form II).
- Figs. 29A-B PXRD diffractograms of a co-crystal comprising modafinil and glycolic acid, with the background removed and as collected, respectively.
- Figs. 30A-B PXRD diffractograms of a co-crystal comprising modafinil and maleic acid, with the background removed and as collected, respectively.
- Figs. 31A-B PXRD diffractograms of a co-crystal comprising 5-fluorouracil and urea, with the background removed and as collected, respectively.
- Fig. 32 DSC thermogram for a co-crystal comprising 5-fluorouracil and urea.
- Fig. 33 TGA thermogram for a co-crystal comprising 5-fluorouracil and urea.
- Fig. 34 Raman spectrum for a co-crystal comprising 5-fluorouracil and urea.
- Figs. 35A-B PXRD diffractograms of a co-crystal comprising hydrochlorothiazide and nicotinic acid, with the background removed and as collected, respectively.
- Figs. 36A-B PXRD diffractograms of a co-crystal comprising hydrochlorothiazide and 18-crown-6, with the background removed, and as collected, respectively.
- Figs. 37A-B PXRD diffractograms of a co-crystal comprising hydrochlorothiazide and piperazine, with the background removed and as collected, respectively.
- Figs. 38A-B An acetaminophen 1-D polymeric chain and a co-crystal of acetaminophen and 4,4'-bipyridine, respectively.
- Figs. 39A-B Pure phenytoin and a co-crystal with phenytoin and pyridone, respectively.
- Figs. 40A-D Pure aspirin and the corresponding crystal structure are shown in Figures 40A and 40B, respectively. Figures 40C and 40D show the supramolecular entity containing the synthon and corresponding co-crystal of aspirin and 4,4'-bipyridine, respectively.
- Figs. 41A-D Pure ibuprofen and the corresponding crystal structure are shown in Figures 41A and 41B, respectively. Figures 41C and 41D show the supramolecular entity containing the synthon and corresponding co-crystal of ibuprofen and 4,4'-bipyridine, respectively.
- Figs. 42A-D Pure flurbiprofen and the corresponding crystal structure are shown in Figures 42A and 42B, respectively. Figures 42C and 42D show the supramolecular synthon and corresponding co-crystal of flurbiprofen and 4,4'-bipyridine, respectively.
- Figs. 43A-B The supramolecular entity containing the synthon and the corresponding co-crystal

structure of flurbiprofen and trans-1,2-bis(4-pyridyl)ethylene, respectively.

Figs. 44A–B The crystal structure of pure carbamazepine and the co-crystal structure of carbamazepine and *p*-phthalaldehyde, respectively.

Fig. 45 A packing diagram of the co-crystal structure of carbamazepine and nicotinamide.

Fig. 46 PXRD diffractogram of a co-crystal comprising carbamazepine and nicotinamide.

Fig. 47 DSC thermogram for a co-crystal comprising carbamazepine and nicotinamide.

Fig. 48 A packing diagram of the co-crystal structure of carbamazepine and saccharin.

Fig. 49 PXRD diffractogram of a co-crystal comprising carbamazepine and saccharin.

Fig. 50 DSC thermogram for a co-crystal comprising carbamazepine and saccharin.

Figs. 51A–B The crystal structure of carbamazepine and the co-crystal structure of carbamazepine and 2,6-pyridinedicarboxylic acid, respectively.

Figs. 52A–B The crystal structure of carbamazepine and the co-crystal structure of carbamazepine and 5-nitroisophthalic acid, respectively.

Figs. 53A–B The crystal structure of carbamazepine and the co-crystal structure of carbamazepine and 1,3,5,7-adamantanetetracarboxylic acid, respectively.

Figs. 54A–B The crystal structure of carbamazepine and the co-crystal structure of carbamazepine and benzoquinone, respectively.

Figs. 55A–B The crystal structure of carbamazepine and the co-crystal structure of carbamazepine and trimesic acid, respectively.

Fig. 56 PXRD diffractogram of a co-crystal comprising carbamazepine and trimesic acid.

Fig. 57 Dissolution profile for a co-crystal of celecoxib:nicotinamide vs. celecoxib free acid.

Fig. 58 Dissolution profile for co-crystals of itraconazole:succinic acid, itraconazole:tartaric acid and itraconazole:malic acid vs. itraconazole free base.

Fig. 59 Hygroscopicity profile for a co-crystal of celecoxib:nicotinamide vs. celecoxib sodium.

Fig. 60 Hydrogen-bonding motifs observed in co-crystals.

Fig. 61 Dissolution profile of several formulations of modafinil free form and modafinil:malonic acid (Form I).

## DETAILED DESCRIPTION OF THE INVENTION

The term “co-crystal” as used herein means a crystalline material comprised of two or more unique solids at room temperature, each containing distinctive physical characteristics, such as structure, melting point and heats of fusion, with the exception that, if specifically stated, the API may be a liquid at room temperature. The co-crystals

of the present invention comprise a co-crystal former H-bonded to an API. The co-crystal former may be H-bonded directly to the API or may be H-bonded to an additional molecule which is bound to the API. The additional molecule may be H-bonded to the API or bound ionically or covalently to the API. The additional molecule could also be a different API. Solvates of API compounds that do not further comprise a co-crystal former are not co-crystals according to the present invention. The co-crystals may however, include one or more solvate molecules in the crystalline lattice. That is, solvates of co-crystals, or a co-crystal further comprising a solvent or compound that is a liquid at room temperature, is included in the present invention, but crystalline material comprised of only one solid and one or more liquids (at room temperature) are not included in the present invention, with the previously noted exception of specifically stated liquid APIs. The co-crystals may also be a co-crystal between a co-crystal former and a salt of an API, but the API and the co-crystal former of the present invention are constructed or bonded together through hydrogen bonds. Other modes of molecular recognition may also be present including, pi-stacking, guest-host complexation and van der Waals interactions. Of the interactions listed above, hydrogen-bonding is the dominant interaction in the formation of the co-crystal, (and a required interaction according to the present invention) whereby a non-covalent bond is formed between a hydrogen bond donor of one of the moieties and a hydrogen bond acceptor of the other. Hydrogen bonding can result in several different intermolecular configurations. For example, hydrogen bonds can result in the formation of dimers, linear chains, or cyclic structures. These configurations can further include extended (two-dimensional) hydrogen bond networks and isolated triads (Fig. 60). An alternative embodiment provides for a co-crystal wherein the co-crystal former is a second API. In another embodiment, the co-crystal former is not an API. In another embodiment the co-crystal comprises two co-crystal formers. For purposes of the present invention, the chemical and physical properties of an API in the form of a co-crystal may be compared to a reference compound that is the same API in a different form. The reference compound may be specified as a free form, or more specifically, a free acid, free base, or zwitterion; a salt, or more specifically for example, an inorganic base addition salt such as sodium, potassium, lithium, calcium, magnesium, ammonium, aluminum salts or organic base

addition salts, or an inorganic acid addition salts such as HBr, HCl, sulfuric, nitric, or phosphoric acid addition salts or an organic acid addition salt such as acetic, propionic, pyruvic, malonic, succinic, malic, maleic, fumaric, tartaric, citric, benzoic, methanesulfonic, ethanesulfonic, stearic or lactic acid addition salt; an anhydrate or hydrate of a free form or salt, or more specifically, for example, a hemihydrate, monohydrate, dihydrate, trihydrate, quadrahydrate, pentahydrate, sesquihydrate; or a solvate of a free form or salt. For example, the reference compound for an API in salt form co-crystallized with a co-crystal former can be the API salt form. Similarly, the reference compound for a free acid API co-crystallized with a co-crystal former can be the free acid API. The reference compound may also be specified as crystalline or amorphous.

According to the present invention, the co-crystals can include an acid addition salt or base addition salt of an API. Acid addition salts include, but are not limited to, inorganic acids such as hydrochloric acid, hydrobromic acid, sulfuric acid, nitric acid, and phosphoric acid, and organic acids such as acetic acid, propionic acid, hexanoic acid, heptanoic acid, cyclopentanepropionic acid, glycolic acid, pyruvic acid, lactic acid, malonic acid, succinic acid, malic acid, maleic acid, fumaric acid, tartaric acid, citric acid, benzoic acid, o-(4-hydroxybenzoyl)benzoic acid, cinnamic acid, maleic acid, methanesulfonic acid, ethanesulfonic acid, 1,2-ethanedithionyl acid, 2-hydroxyethanesulfonic acid, benzenesulfonic acid, *p*-chlorobenzenesulfonic acid, 2-naphthalenesulfonic acid, *p*-toluenesulfonic acid, camphorsulfonic acid, 4-methylbicyclo[2.2.2]oct-2-ene-1-carboxylic acid, glucoheptonic acid, 4,4'-methylenebis(3-hydroxy-2-ene-1-carboxylic acid), 3-phenylpropionic acid, trimethylacetic acid, tertiary butylacetic acid, lauryl sulfuric acid, gluconic acid, glutaric acid, hydroxynaphthoic acid, salicylic acid, stearic acid, and muconic acid. Base addition salts include, but are not limited to, inorganic bases such as sodium, potassium, lithium, ammonium, calcium and magnesium salts, and organic bases such as primary, secondary and tertiary amines (e.g. isopropylamine, trimethyl amine, diethyl amine, tri(iso-propyl) amine, tri(n-propyl) amine, ethanolamine, 2-dimethylaminoethanol, tromethamine, lysine, arginine, histidine, procaine, hydrabamine, choline, betaine, ethylenediamine, glucosamine, N-alkylglucamines, theobromine, purines, piperazine, piperidine,



morpholine, and N-ethylpiperidine).

The ratio of API to co-crystal former may be stoichiometric or non-stoichiometric according to the present invention. For example, 1:1, 1.5:1, 1:1.5, 2:1 and 1:2 ratios of API:co-crystal former are acceptable.

It has surprisingly been found that when an API and a selected co-crystal former are allowed to form co-crystals, the resulting co-crystals give rise to improved properties of the API, as compared to the API in a free form (including free acids, free bases, and zwitterions, hydrates, solvates, etc.), or an acid or base salt thereof particularly with respect to: solubility, dissolution, bioavailability, stability, C<sub>max</sub>, T<sub>max</sub>, processability, longer lasting therapeutic plasma concentration, hygroscopicity, crystallization of amorphous compounds, decrease in form diversity (including polymorphism and crystal habit), change in morphology or crystal habit, etc. For example, a co-crystal form of an API is particularly advantageous where the original API is insoluble or sparingly soluble in water. Additionally, the co-crystal properties conferred upon the API are also useful because the bioavailability of the API can be improved and the plasma concentration and/or serum concentration of the API can be improved. This is particularly advantageous for orally-administrable formulations. Moreover, the dose response of the API can be improved, for example by increasing the maximum attainable response and/or increasing the potency of the API by increasing the biological activity per dosing equivalent.

Accordingly, in a first aspect, the present invention provides a pharmaceutical composition comprising a co-crystal of an API and a co-crystal former, such that the API and co-crystal former are capable of co-crystallizing from a solution phase under crystallization conditions or from the solid-state, for example, through grinding, heating, or through vapor transfer (e.g., co-sublimation). In another aspect, the API has at least one functional group selected from ether, thioether, alcohol, thiol, aldehyde, ketone, thioketone, nitrate ester, phosphate ester, thiophosphate ester, ester, thioester, sulfate ester, carboxylic acid, phosphonic acid, phosphinic acid, sulfonic acid, amide, primary amine, secondary amine, ammonia, tertiary amine, imine, thiocyanate, cyanamide, oxime, nitrile, diazo, organohalide, nitro, S-heterocyclic ring, thiophene, N-heterocyclic ring, pyrrole, O-heterocyclic ring, furan, epoxide, peroxide, hydroxamic acid, imidazole, and

pyridine and a co-crystal former which has at least one functional group selected from ether, thioether, alcohol, thiol, aldehyde, ketone, thioketone, nitrate ester, phosphate ester, thiophosphate ester, ester, thioester, sulfate ester, carboxylic acid, phosphonic acid, phosphinic acid, sulfonic acid, amide, primary amine, secondary amine, ammonia, tertiary amine, imine, thiocyanate, cyanamide, oxime, nitrile, diazo, organohalide, nitro, S-heterocyclic ring, thiophene, N-heterocyclic ring, pyrrole, O-heterocyclic ring, furan, epoxide, peroxide, hydroxamic acid, imidazole, and pyridine, or a functional group in a Table herein, such that the API and co-crystal former are capable of co-crystallizing from a solution phase under crystallization conditions.

The co-crystals of the present invention are formed where the API and co-crystal former are bonded together through hydrogen bonds. Other non-covalent interactions, including pi-stacking and van der Waals interactions, may also be present.

In one embodiment, the co-crystal former is selected from the co-crystal formers of Table I and Table II. In other embodiments, the co-crystal former of Table I is specified as a Class 1, Class 2, or Class 3 co-crystal former (see column labeled "class" Table I). In another embodiment, the difference in  $pK_a$  value of the co-crystal former and the API is less than 2. In other embodiments, the difference in  $pK_a$  values of the co-crystal former and API is less than 3, less than 4, less than 5, between 2 and 3, between 3 and 4, or between 4 and 5. Table I lists multiple  $pK_a$  values for co-crystal formers having multiple functionalities. It is readily apparent to one skilled in the art the particular functional group corresponding to a particular  $pK_a$  value.

In another embodiment the particular functional group of a co-crystal former interacting with the API is specified (see for example Table I, columns labeled "Functionality" and "Molecular Structure" and the column of Table II labeled "Co-Crystal Former Functional Group"). In a further embodiment the functional group of the API interacting with the co-crystal former functional group is specified (see, for example, Tables II and III).

In another embodiment, the co-crystal comprises more than one co-crystal former. For example, two, three, four, five, or more co-crystal formers can be incorporated in a co-crystal with an API. Co-crystals which comprise two or more co-crystal formers and an API are bound together via hydrogen bonds. In one embodiment, incorporated co-

crystal formers are hydrogen bonded to the API molecules. In another embodiment, co-crystal formers are hydrogen bonded to either the API molecules or the incorporated co-crystal formers.

In a further embodiment, several co-crystal formers can be contained in a single compartment, or kit, for ease in screening an API for potential co-crystal species. The co-crystal kit can comprise 5, 10, 15, 20, 25, 30, 40, 50, 60, 70, 80, 90, 100, or more of the co-crystal formers in Tables I and II. The co-crystal formers are in solid form or in solution and in an array of individual reaction vials such that individual co-crystal formers can be tested with one or more APIs by one or more crystallization methods or multiple co-crystal formers can be easily tested against one or more compounds by one or more crystallization methods. The crystallization methods include, but are not limited to, melt recrystallization, grinding, milling, standing, co-crystal formation from solution by evaporation, thermally driven crystallization from solution, co-crystal formation from solution by addition of anti-solvent, co-crystal formation from solution by vapor-diffusion, co-crystal formation from solution by drown-out, co-crystal formation from solution by any combination of the above mentioned techniques, co-crystal formation by co-sublimation, co-crystal formation by sublimation using a Knudsen cell apparatus, co-crystal formation by standing the desired components of the co-crystal in the presence of solvent vapor, co-crystal formation by slurry conversion of the desired components of the co-crystal in a solvent or mixtures of solvents, or co-crystal formation by any combination of the above techniques in the presence of additives, nucleates, crystallization enhancers, precipitants, chemical stabilizers, or anti-oxidants. The co-crystallization kits can be used alone or as part of larger crystallization experiments. For example, kits can be constructed as single co-crystal former single well kits, single co-crystal former multi-well kits, multi-co-crystal former single well kits, or multi-co-crystal former multi-well kits. High-throughput crystallization (e.g., the CrystalMax<sup>TM</sup> platform) can be used to construct and customize co-crystal former kits. Multi-well plates (e.g., 96 wells, 384 wells, 1536 wells, etc.), for example, can be used to store or employ an array of co-crystal formers.

In a further embodiment, the API is selected from an API of Table IV or elsewhere herein. For pharmaceuticals listed in Table IV, co-crystals can comprise such

APIs in free form (i.e. free acid, free base, zwitter ion), salts, solvates, hydrates, or the like. For APIs in Table IV listed as salts, solvates, hydrates, and the like, the API can either be of the form listed in Table IV or its corresponding free form, or of another form that is not listed. Table IV includes the CAS number, chemical name, or a PCT or patent reference (each incorporated herein in their entireties). In further embodiments, the functional group of the particular API interacting with the co-crystal former is specified. A specific functional group of a co-crystal former, a specific co-crystal former, or a specified functional group or a specific co-crystal former interacting with the particular API may also be specified. It is noted that for Table II, the co-crystal former, and optionally the specific functionality, and each of the listed corresponding interacting groups are included as individual species of the present invention. Thus, each specific combination of a co-crystal former and one of the interacting groups in the same row may be specified as a species of the present invention. The same is true for other combinations as discussed in the Tables and elsewhere herein.

In another embodiment of the present invention, the co-crystal comprises an API wherein the API forms a dimeric primary amide structure via hydrogen bonds with an  $R^2_2$  (8) motif. In such a structure, the  $NH_2$  moiety can also participate in a hydrogen bond with a donor or an acceptor moiety from, for example, a co-crystal former or an additional (third) molecule, and the  $C=O$  moiety can participate in a hydrogen bond with a donor moiety from the co-crystal former or the additional molecule. In a further embodiment, the dimeric primary amide structure further comprises one, two, three, or four hydrogen bond donors. In a further embodiment, the dimeric primary amide structure further comprises one or two hydrogen bond acceptors. In a further embodiment, the dimeric primary amide structure further comprises a combination of hydrogen bond donors and acceptors. For example, the dimeric primary amide structure can further comprise one hydrogen bond donor and one hydrogen bond acceptor, one hydrogen bond donor and two hydrogen bond acceptors, two hydrogen bond donors and one hydrogen bond acceptor, two hydrogen bond donors and two hydrogen bond acceptors, or three hydrogen bond donors and one hydrogen bond acceptor. Two non-limiting examples of APIs which form a dimeric primary amide co-crystal structure include modafinil and carbamazepine. Some examples of APIs which include a primary



amide functional group include, but are not limited to, arotinolol, atenolol, carpipramine, cefotetan, cefsulodin, docapromine, darifenacin, exalamide, fidarestat, frovatriptan, silodosin, levetiracetam, MEN-10700, mizoribine, oxiracetam, piracetam, protirelin, TRH, ribavirin, valrecemide, temozolomide, tiazofurin, antiPARP-2, levovirin, N-benzyloxycarbonyl glycineamide, and UCB-34714.

In each process according to the invention, there is a need to contact the API with the co-crystal former. This may involve grinding or milling the two solids together or melting one or both components and allowing them to recrystallize. The use of a granulating liquid may improve or may impede co-crystal formation. Non-limiting examples of tools useful for the formation of co-crystals may include, for example, an extruder or a mortar and pestle. Further, contacting the API with the co-crystal former may also involve either solubilizing the API and adding the co-crystal former, or solubilizing the co-crystal former and adding the API. Crystallization conditions are applied to the API and co-crystal former. This may entail altering a property of the solution, such as pH or temperature and may require concentration of the solute, usually by removal of the solvent, typically by drying the solution. Solvent removal results in the concentration of both API and co-crystal former increasing over time so as to facilitate crystallization. For example, evaporation, cooling, co-sublimation, or the addition of an antisolvent may be used to crystallize co-crystals. In another embodiment, a slurry comprising an API and a co-crystal former is used to form co-crystals. Once the solid phase comprising any crystals is formed, this may be tested as described herein.

The manufacture of co-crystals on a large and/or commercial scale may be successfully completed using one or more of the processes and techniques described herein. For example, crystallization of co-crystals from a solvent and grinding or milling are conceivable non-limiting processes.

In another embodiment, the use of an excess (more than 1 molar equivalent for a 1:1 co-crystal) of a co-crystal former has been shown to drive the formation of stoichiometric co-crystals. For example, co-crystals with stoichiometries of 1:1, 2:1, or 1:2 can be produced by adding co-crystal former in an amount that is 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 50, 75, 100 times or more than the stoichiometric amount for a given co-crystal. Such an excessive use of a co-crystal former to form a co-crystal can be



employed in solution or when grinding an API and a co-crystal former to drive co-crystal formation.

In another embodiment, the present invention provides for the use of an ionic liquid as a medium for the formation of a co-crystal, and can also be used to crystallize other forms in addition to co-crystals (e.g., salts, solvates, free acid, free base, zwitterions, etc.). This medium is useful, for example, where the above methods do not work or are difficult or impossible to control. Several non-limiting examples of ionic liquids useful in co-crystal formation are: 1-butyl-3-methylimidazolium lactate, 1-ethyl-3-methylimidazolium lactate, and 1-butylpyridinium hexafluorophosphate. The co-crystals obtained as a result of one or more of the above processes or techniques may be readily incorporated into a pharmaceutical composition by conventional means. Pharmaceutical compositions in general are discussed in further detail below and may further comprise a pharmaceutically-acceptable diluent, excipient or carrier.

In a further aspect, the present invention provides a process for the production of a pharmaceutical composition, which process comprises:

- (1) providing an API which has at least one functional group selected from ether, thioether, alcohol, thiol, aldehyde, ketone, thioketone, nitrate ester, phosphate ester, thiophosphate ester, ester, thioester, sulfate ester, carboxylic acid, phosphonic acid, phosphinic acid, sulfonic acid, amide, primary amine, secondary amine, ammonia, tertiary amine, imine, thiocyanate, cyanamide, oxime, nitrile diazo, organohalide, nitro, S-heterocyclic ring, thiophene, N-heterocyclic ring, pyrrole, O-heterocyclic ring, furan, epoxide, peroxide, hydroxamic acid, imidazole, and pyridine or of Table II or III;
- (2) providing a co-crystal former which has at least one functional group selected from ether, thioether, alcohol, thiol, aldehyde, ketone, thioketone, nitrate ester, phosphate ester, thiophosphate ester, ester, thioester, sulfate ester, carboxylic acid, phosphonic acid, phosphinic acid, sulfonic acid, amide, primary amine, secondary amine, ammonia, tertiary amine, imine, thiocyanate, cyanamide, oxime, nitrile, diazo, organohalide, nitro, S-heterocyclic ring, thiophene, N-heterocyclic ring, pyrrole, O-heterocyclic ring, furan, epoxide, peroxide, hydroxamic acid, imidazole, and pyridine or of Table I, II, or III;

- (3) grinding, heating or contacting in solution the API with the co-crystal former under crystallization conditions;
- (4) isolating co-crystals formed thereby; and
- (5) incorporating the co-crystals into a pharmaceutical composition.

In a still further aspect the present invention provides a process for the production of a pharmaceutical composition, which comprises:

- (1) grinding, heating or contacting in solution an API with a co-crystal former, under crystallization conditions, so as to form a solid phase;
- (2) isolating co-crystals comprising the API and the co-crystal former; and
- (3) incorporating the co-crystals into a pharmaceutical composition.

Assaying the solid phase for the presence of co-crystals of the API and the co-crystal former may be carried out by conventional methods known in the art. For example, it is convenient and routine to use powder X-ray diffraction techniques to assess the presence of co-crystals. This may be affected by comparing the spectra of the API, the crystal former and putative co-crystals in order to establish whether or not true co-crystals had been formed. Other techniques, used in an analogous fashion, include differential scanning calorimetry (DSC), thermogravimetric analysis (TGA), solid state NMR spectroscopy, and Raman spectroscopy. Single crystal X-ray diffraction is especially useful in identifying co-crystal structures.

In a further aspect, the present invention therefore provides a process of screening for co-crystal compounds, which comprises:

- (1) providing (i) an API compound, and (ii) a co-crystal former; and
- (2) screening for co-crystals of APIs with co-crystal formers by subjecting each combination of API and co-crystal former to a step comprising:
  - (a) grinding, heating, co-subliming, co-melting, or contacting in solution the API with the co-crystal former under crystallization conditions so as to form a solid phase; and
  - (b) isolating co-crystals comprising the API and the co-crystal former.

An alternative embodiment is drawn to a process of screening for co-crystal compounds, which comprises:

- (1) providing (i) an API or a plurality of different APIs, and (ii) a co-crystal former or a plurality of different co-crystal formers, wherein at least one of the API and the co-crystal former is provided as a plurality thereof; and
- (2) screening for co-crystals of APIs with co-crystal formers by subjecting each combination of API and co-crystal former to a step comprising
  - (a) grinding, heating, co-subliming, co-melting, or contacting in solution the API with the co-crystal former under crystallization conditions so as to form a solid phase; and
  - (b) isolating co-crystals comprising the API and the co-crystal former.

Some of the APIs and co-crystal formers of the present invention have one or more chiral centers and may exist in a variety of stereoisomeric configurations. As a consequence of these chiral centers, several APIs and co-crystal formers of the present invention occur as racemates, mixtures of enantiomers and as individual enantiomers, as well as diastereomers and mixtures of diastereomers. All such racemates, enantiomers, and diastereomers are within the scope of the present invention including, for example, *cis*- and *trans*-isomers, R- and S-enantiomers, and (D)- and (L)-isomers. Co-crystals of the present invention can include isomeric forms of either the API or the co-crystal former or both. Isomeric forms of APIs and co-crystal formers include, but are not limited to, stereoisomers such as enantiomers and diastereomers. In one embodiment, a co-crystal can comprise a racemic API and/or co-crystal former. In another embodiment, a co-crystal can comprise an enantiomerically pure API and/or co-crystal former. In another embodiment, a co-crystal can comprise an API or a co-crystal former with an enantiomeric excess of about 50 percent, 55 percent, 60 percent, 65 percent, 70 percent, 75 percent, 80 percent, 85 percent, 90 percent, 95 percent, 96 percent, 97 percent, 98 percent, 99 percent, greater than 99 percent, or any intermediate value. Several non-limiting examples of stereoisomeric APIs include modafinil, *cis*-itraconazole, ibuprofen, and flurbiprofen. Several non-limiting examples of stereoisomeric co-crystal formers

include tartaric acid and malic acid.

Co-crystals comprising enantiomerically pure components (e.g., API or co-crystal former) can give rise to chemical and/or physical properties which are modulated with respect to those of the corresponding co-crystal comprising a racemic component. For example, the modafinil:malonic acid co-crystal from Example 10 comprises racemic modafinil. Enantiomerically pure R-modafinil:malonic acid can conceivably be synthesized via the same or another method of the present invention and is therefore included in the scope of the invention. Likewise, enantiomerically pure S-modafinil:malonic acid can conceivably be synthesized via a method of the present invention and is therefore included in the scope of the invention. A co-crystal comprising an enantiomerically pure component can give rise to a modulation of, for example, activity, bioavailability, or solubility, with respect to the corresponding co-crystal comprising a racemic component. As an example, the co-crystal R-modafinil:malonic acid can have modulated properties as compared to the racemic modafinil:malonic acid co-crystal.

As used herein and unless otherwise noted, the term "racemic co-crystal" refers to a co-crystal which is comprised of an equimolar mixture of two enantiomers of the API, the co-crystal former, or both. For example, a co-crystal comprising a stereoisomeric API and a non-stereoisomeric co-crystal former is a "racemic co-crystal" when there is present an equimolar mixture of the API enantiomers. Similarly, a co-crystal comprising a non-stereoisomeric API and a stereoisomeric co-crystal former is a "racemic co-crystal" when there is present an equimolar mixture of the co-crystal former enantiomers. In addition, a co-crystal comprising a stereoisomeric API and a stereoisomeric co-crystal former is a "racemic co-crystal" when there is present an equimolar mixture of the API enantiomers and of the co-crystal former enantiomers.

As used herein and unless otherwise noted, the term "enantiomerically pure co-crystal" refers to a co-crystal which is comprised of a stereoisomeric API or a stereoisomeric co-crystal former or both where the enantiomeric excess of the stereoisomeric species is greater than or equal to about 90 percent *ee*.

In another embodiment, the present invention includes a pharmaceutical composition comprising a co-crystal with an enantiomerically pure API or co-crystal

former wherein the bioavailability is modulated with respect to the racemic co-crystal. In another embodiment, the present invention includes a pharmaceutical composition comprising a co-crystal with an enantiomerically pure API or co-crystal former wherein the activity is modulated with respect to the racemic co-crystal. In another embodiment, the present invention includes a pharmaceutical composition comprising a co-crystal with an enantiomerically pure API or co-crystal former wherein the solubility is modulated with respect to the racemic co-crystal.

As used herein, the term "enantiomerically pure" includes a composition which is substantially enantiomerically pure and includes, for example, a composition with greater than or equal to about 90, 91, 92, 93, 94, 95, 96, 97, 98, or 99 percent enantiomeric excess.

#### Solubility Modulation

In a further aspect, the present invention provides a process for modulating the solubility of an API, which process comprises:

- (1) grinding, heating, co-subliming, co-melting, or contacting in solution the API with a co-crystal former under crystallization conditions, so as to form a co-crystal of the API and the co-crystal former; and
- (2) isolating co-crystals comprising the API and the co-crystal former.

In one embodiment, the solubility of the API is modulated such that the aqueous solubility is increased. Solubility of APIs may be measured by any conventional means such as chromatography (e.g., HPLC) or spectroscopic determination of the amount of API in a saturated solution of the API, such as UV-spectroscopy, IR-spectroscopy, Raman spectroscopy, quantitative mass spectroscopy, or gas chromatography.

In another aspect of the invention, the API may have low aqueous solubility. Typically, low aqueous solubility in the present application refers to a compound having a solubility in water which is less than or equal to 10 mg/mL, when measured at 37 degrees C, and preferably less than or equal to 5 mg/mL or 1 mg/mL. Low aqueous solubility can further be specifically defined as less than or equal to 900, 800, 700, 600, 500, 400, 300, 200, 150, 100, 90, 80, 70, 60, 50, 40, 30, 20 micrograms/mL, or further 10,



5 or 1 micrograms/mL, or further 900, 800, 700, 600, 500, 400, 300, 200, 150, 100, 90, 80, 70, 60, 50, 40, 30, 20, or 10 ng/mL, or less than 10 ng/mL when measured at 37 degrees C. Aqueous solubility can also be specified as less than 500, 400, 300, 200, 150, 100, 75, 50 or 25 mg/mL. As embodiments of the present invention, solubility can be increased 2, 3, 4, 5, 7, 10, 15, 20, 25, 50, 75, 100, 200, 300, 500, 750, 1000, 5000, or 10,000 times by making a co-crystal of the reference form (e.g., crystalline or amorphous free acid, free base or zwitter ion, hydrate or solvate), or a salt thereof. Further aqueous solubility can be measured in simulated gastric fluid (SGF) or simulated intestinal fluid (SIF) rather than water. SGF (non-diluted) of the present invention is made by combining 1 g/L Triton X-100 and 2 g/L NaCl in water and adjusting the pH with 20 mM HCl to obtain a solution with a final pH=1.7 (SIF is 0.68% monobasic potassium phosphate, 1% pancreatin, and sodium hydroxide where the pH of the final solution is 7.5). The pH of the solvent used may also be specified as 1, 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8, 1.9, 2, 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 2.9, 3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7, 7.5, 8, 8.5, 9, 9.5, 10, 10.5, 11, 11.5, 12, 12.5, 13, 13.5, or 14 or any pH in between successive values.

Examples of embodiments includes: co-crystal compositions with an aqueous solubility, at 37 degrees C and a pH of 7.0, that is increased at least 5 fold over the reference form, co-crystal compositions with a solubility in SGF that is increased at least 5 fold over the reference form, co-crystal compositions with a solubility in SIF that is increased at least 5 fold over the reference form.

#### Dissolution Modulation

In another aspect of the present invention, the dissolution profile of the API is modulated whereby the aqueous dissolution rate or the dissolution rate in simulated gastric fluid or in simulated intestinal fluid, or in a solvent or plurality of solvents is increased. Dissolution rate is the rate at which API solids dissolve in a dissolution medium. For APIs whose absorption rates are faster than the dissolution rates (e.g., steroids), the rate-limiting step in the absorption process is often the dissolution rate. Because of a limited residence time at the absorption site, APIs that are not dissolved before they are removed from intestinal absorption site are considered useless. Therefore, the rate of dissolution has a major impact on the performance of APIs that are poorly

soluble. Because of this factor, the dissolution rate of APIs in solid dosage forms is an important, routine, quality control parameter used in the API manufacturing process.

$$\text{Dissolution rate} = K S (C_s - C)$$

where K is dissolution rate constant, S is the surface area,  $C_s$  is the apparent solubility, and C is the concentration of API in the dissolution medium. For rapid API absorption,  $C_s - C$  is approximately equal to  $C_s$ . The dissolution rate of APIs may be measured by conventional means known in the art.

The increase in the dissolution rate of a co-crystal, as compared to the reference form (e.g., free form or salt), may be specified, such as by 10, 20, 30, 40, 50, 60, 70, 80, 90, or 100%, or by 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 40, 50, 75, 100, 125, 150, 175, 200, 250, 300, 350, 400, 500, 1000, 10,000, or 100,000 fold greater than the reference form (e.g., free form or salt form) in the same solution. Conditions under which the dissolution rate is measured is the same as discussed above. The increase in dissolution may be further specified by the time the composition remains supersaturated before reaching equilibrium solubility.

Examples of above embodiments include: co-crystal compositions with a dissolution rate in aqueous solution, at 37 degrees C and a pH of 7.0, that is increased at least 5 fold over the reference form, co-crystal compositions with a dissolution rate in SGF that is increased at least 5 fold over the reference form, co-crystal compositions with a dissolution rate in SIF that is increased at least 5 fold over the reference form.

### Bioavailability Modulation

The methods of the present invention are used to make a pharmaceutical API formulation with greater solubility, dissolution, and bioavailability. Bioavailability can be improved via an increase in AUC, reduced time to  $T_{max}$ , (the time to reach peak blood serum levels), or increased  $C_{max}$ . The present invention can result in higher plasma concentrations of API when compared to the neutral form or salt alone (reference form). AUC is the area under the plot of plasma concentration of API (not logarithm of the concentration) against time after API administration. The area is conveniently determined by the "trapezoidal rule": The data points are connected by straight line segments, perpendiculars are erected from the abscissa to each data point, and the sum of the areas

of the triangles and trapezoids so constructed is computed. When the last measured concentration ( $C_n$ , at time  $t_n$ ) is not zero, the AUC from  $t_n$  to infinite time is estimated by  $C_n/k_{el}$ .

The AUC is of particular use in estimating bioavailability of APIs, and in estimating total clearance of APIs ( $Cl_T$ ). Following single intravenous doses,  $AUC = D/Cl_T$ , for single compartment systems obeying first-order elimination kinetics, where  $D$  is the dose; alternatively,  $AUC = C_0/k_{el}$ , where  $k_{el}$  is the API elimination rate constant. With routes other than the intravenous, for such systems,  $AUC = F \cdot D/Cl_T$ , where  $F$  is the absolute bioavailability of the API.

Thus, in a further aspect, the present invention provides a process for modulating the bioavailability of an API when administered in its normal and effective dose range as a co-crystal, whereby the AUC is increased, the time to  $T_{max}$  is reduced, or  $C_{max}$  is increased, as compared to a reference form, which process comprises:

- (1) grinding, heating, co-subliming, co-melting, or contacting in solution the API with a co-crystal former under crystallization conditions, so as to form a co-crystal of the API and the co-crystal former; and
- (2) isolating co-crystals comprising the API and the co-crystal former.

Examples of the above embodiments include: co-crystal compositions with a time to  $T_{max}$  that is reduced by at least 10% as compared to the reference form, co-crystal compositions with a time to  $T_{max}$  that is reduced by at least 20% over the reference form, co-crystal compositions with a time to  $T_{max}$  that is reduced by at least 40% over the reference form, co-crystal compositions with a time to  $T_{max}$  that is reduced by at least 50% over the reference form, co-crystal compositions with a  $T_{max}$  that is reduced by at least 60% over the reference form, co-crystal compositions with a  $T_{max}$  that is reduced by at least 70% over the reference form, co-crystal compositions with a  $T_{max}$  that is reduced by at least 80% over the reference form, co-crystal compositions with a  $T_{max}$  that is reduced by at least 90% over the reference form, co-crystal compositions with a  $C_{max}$  that is increased by at least 20% over the reference form, co-crystal compositions with a  $C_{max}$  that is increased by at least 30% over the reference form, co-crystal compositions with a  $C_{max}$  that is increased by at least 40% over the reference form, co-crystal compositions

with a  $C_{\max}$  that is increased by at least 50% over the reference form, co-crystal compositions with a  $C_{\max}$  that is increased by at least 60% over the reference form, co-crystal compositions with a  $C_{\max}$  that is increased by at least 70% over the reference form, co-crystal compositions with a  $C_{\max}$  that is increased by at least 80% over the reference form, co-crystal compositions with a  $C_{\max}$  that is increased by at least 2 fold, 3 fold, 5 fold, 7.5 fold, 10 fold, 25 fold, 50 fold or 100 fold, co-crystal compositions with an AUC that is increased by at least 10% over the reference form, co-crystal compositions with an AUC that is increased by at least 20% over the reference form, co-crystal compositions with an AUC that is increased by at least 30% over the reference form, co-crystal compositions with an AUC that is increased by at least 40% over the reference form, co-crystal compositions with an AUC that is increased by at least 50% over the reference form, co-crystal compositions with an AUC that is increased by at least 60% over the reference form, co-crystal compositions with an AUC that is increased by at least 70% over the reference form, co-crystal compositions with an AUC that is increased by at least 80% over the reference form or co-crystal compositions with an AUC that is increased by at least 2 fold, 3 fold, 4 fold, 5 fold, 6 fold, 7 fold, 8 fold, 9 fold, or 10 fold. Other examples include wherein the reference form is crystalline, wherein the reference form is amorphous, wherein the reference form is an anhydrous crystalline sodium salt, or wherein the reference form is an anhydrous crystalline HCl salt.

#### Dose Response Modulation

In a further aspect the present invention provides a process for improving the dose response of an API, which process comprises:

- (1) grinding, heating, co-subliming, co-melting, or contacting in solution an API with a co-crystal former under crystallization conditions, so as to form a co-crystal of the API and the co-crystal former; and
- (2) isolating co-crystals comprising the API and the co-crystal former.

Dose response is the quantitative relationship between the magnitude of response and the dose inducing the response and may be measured by conventional means known in the art. The curve relating effect (as the dependent variable) to dose (as the



independent variable) for an API-cell system is the "dose-response curve". Typically, the dose-response curve is the measured response to an API plotted against the dose of the API (mg/kg) given. The dose response curve can also be a curve of AUC against the dose of the API given.

In an embodiment of the present invention, a co-crystal of the present invention has an increased dose response curve or a more linear dose response curve than the corresponding reference compound.

### Increased Stability

In a still further aspect the present invention provides a process for improving the stability of an API (as compared to a reference form such as its free form or a salt thereof), which process comprises:

- (1) grinding, heating, co-subliming, co-melting, or contacting in solution the pharmaceutical salt with a co-crystal former under crystallization conditions, so as to form a co-crystal of the API and the co-crystal former; and
- (2) isolating co-crystals comprising the API and the co-crystal former.

In a preferred embodiment, the compositions of the present invention, including the API or active pharmaceutical ingredient (API) and formulations comprising the API, are suitably stable for pharmaceutical use. Preferably, the API or formulations thereof of the present invention are stable such that when stored at 30 degrees C for 2 years, less than 0.2 % of any one degradant is formed. The term degradant refers herein to product(s) of a single type of chemical reaction. For example, if a hydrolysis event occurs that cleaves a molecule into two products, for the purpose of the present invention, it would be considered a single degradant. More preferably, when stored at 40 degrees C for 2 years, less than 0.2 % of any one degradant is formed. Alternatively, when stored at 30 degrees C for 3 months, less than 0.2% or 0.15 %, or 0.1 % of any one degradant is formed, or when stored at 40 degrees C for 3 months, less than 0.2 % or 0.15 %, or 0.1 % of any one degradant is formed. Further alternatively, when stored at 60 degrees C for 4 weeks, less than 0.2 % or 0.15 %, or 0.1 % of any one degradant is formed. The relative humidity (RH) may be specified as ambient (RH), 75 % (RH), or as any single integer between 1 to 99 %.



### Difficult to Salt or Unsalttable Compounds

In a still further aspect the present invention provides a process for making co-crystals of unsalttable or difficult to salt APIs which process comprises:

- (1) grinding, heating, co-subliming, co-melting, or contacting in solution an API with a co-crystal former under crystallization conditions, so as to form a co-crystal of the API and the co-crystal former; and
- (2) isolating co-crystals comprising the API and the co-crystal former.

Difficult to salt compounds include bases with a pKa less than 3 or acids with a pKa greater than 10. Zwitter ions are also difficult to salt or unsalttable compounds according to the present invention.

### Decreasing Hygroscopicity

In a still further aspect, the present invention provides a method for decreasing the hygroscopicity of an API, which method comprises:

- (1) grinding, heating, co-subliming, co-melting, or contacting in solution the API with a co-crystal former under crystallization conditions, so as to form a co-crystal of the API and the co-crystal former; and
- (2) isolating co-crystals comprising the API and the co-crystal former.

An aspect of the present invention provides a pharmaceutical composition comprising a co-crystal of an API that is less hygroscopic than amorphous or crystalline, free form or salt (including metal salts such as sodium, potassium, lithium, calcium, magnesium) or another reference compound. Hygroscopicity can be assessed by dynamic vapor sorption analysis, in which 5-50 mg of the compound is suspended from a Cahn microbalance. The compound being analyzed should be placed in a non-hygroscopic pan and its weight should be measured relative to an empty pan composed of identical material and having nearly identical size, shape, and weight. Ideally, platinum pans should be used. The pans should be suspended in a chamber through which a gas, such as air or nitrogen, having a controlled and known percent relative humidity (%RH) is flowed until equilibrium criteria are met. Typical equilibrium criteria include weight

changes of less than 0.01 % over 3 minutes at constant humidity and temperature. The relative humidity should be measured for samples dried under dry nitrogen to constant weight ( $<0.01$  % change in 3 minutes) at 40 degrees C unless doing so would de-solvate or otherwise convert the material to an amorphous compound. In one aspect, the hygroscopicity of a dried compound can be assessed by increasing the RH from 5 to 95 % in increments of 5 % RH and then decreasing the RH from 95 to 5 % in 5 % increments to generate a moisture sorption isotherm. The sample weight should be allowed to equilibrate between each change in % RH. If the compound deliquesces or becomes amorphous above 75 % RH, but below 95 % RH, the experiment should be repeated with a fresh sample and the relative humidity range for the cycling should be narrowed to 5-75 % RH or 10-75 % RH, instead of 5-95 % RH. If the sample cannot be dried prior to testing due to lack of form stability, than the sample should be studied using two complete humidity cycles of either 10-75 % RH or 5-95 % RH, and the results of the second cycle should be used if there is significant weight loss at the end of the first cycle. Hygroscopicity can be defined using various parameters. For purposes of the present invention, a non-hygroscopic molecule should not gain or lose more than 1.0 %, or more preferably, 0.5 % weight at 25 degrees C when cycled between 10 and 75 % RH (relative humidity at 25 degrees C). The non-hygroscopic molecule more preferably should not gain or lose more than 1.0 %, or more preferably, 0.5 % weight when cycled between 5 and 95 % RH at 25 degrees C, or more than 0.25 % of its weight between 10 and 75 % RH. Most preferably, a non-hygroscopic molecule will not gain or lose more than 0.25 % of its weight when cycled between 5 and 95 % RH.

Alternatively, for purposes of the present invention, hygroscopicity can be defined using the parameters of Callaghan et al., "Equilibrium moisture content of pharmaceutical excipients", in *Api Dev. Ind. Pharm.*, Vol. 8, pp. 335-369 (1982). Callaghan et al. classified the degree of hygroscopicity into four classes.

Class 1: Non-hygroscopic      Essentially no moisture increases occur at relative humidities below 90 %.

Class 2: Slightly hygroscopic      Essentially no moisture increases occur at relative humidities below 80%.

Class 3: Moderately hygroscopic    Moisture content does not increase more than 5 % after storage for 1 week at relative humidities below 60 %.

Class 4: Very hygroscopic    Moisture content increase may occur at relative humidities as low as 40 to 50 %.

Alternatively, for purposes of the present invention, hygroscopicity can be defined using the parameters of the European Pharmacopoeia Technical Guide (1999, p. 86) which has defined hygroscopicity, based on the static method, after storage at 25 degrees C for 24 hours at 80 % RH:

Slightly hygroscopic: Increase in mass is less than 2 percent m/m and equal to or greater than 0.2 percent m/m.

Hygroscopic: Increase in mass is less than 15 percent m/m and equal to or greater than 0.2 percent m/m.

Very Hygroscopic: Increase in mass is equal to or greater than 15 percent m/m.

Deliquescent: Sufficient water is absorbed to form a liquid.

Co-crystals of the present invention can be set forth as being in Class 1, Class 2, or Class 3, or as being Slightly hygroscopic, Hygroscopic, or Very Hygroscopic. Co-crystals of the present invention can also be set forth based on their ability to reduce hygroscopicity. Thus, preferred co-crystals of the present invention are less hygroscopic than a reference compound. The reference compound can be specified as the API in free form (free acid, free base, hydrate, solvate, etc.) or salt (e.g., especially metal salts such as sodium, potassium, lithium, calcium, or magnesium). Further included in the present invention are co-crystals that do not gain or lose more than 1.0 % weight at 25 degrees C when cycled between 10 and 75 % RH, wherein the reference compound gains or loses more than 1.0 % weight under the same conditions. Further included in the present invention are co-crystals that do not gain or lose more than 0.5 % weight at 25 degrees C when cycled between 10 and 75 % RH, wherein the reference compound gains or loses more than 0.5 % or more than 1.0 % weight under the same conditions. Further included

in the present invention are co-crystals that do not gain or lose more than 1.0 % weight at 25 degrees C when cycled between 5 and 95 % RH, wherein the reference compound gains or loses more than 1.0 % weight under the same conditions. Further included in the present invention are co-crystals that do not gain or lose more than 0.5 % weight at 25 degrees C when cycled between 5 and 95 % RH, wherein the reference compound gains or loses more than 0.5 % or more than 1.0 % weight under the same conditions. Further included in the present invention are co-crystals that do not gain or lose more than 0.25 % weight at 25 degrees C when cycled between 5 and 95 % RH, wherein the reference compound gains or loses more than 0.5 % or more than 1.0 % weight under the same conditions.

Further included in the present invention are co-crystals that have a hygroscopicity (according to Callaghan et al.) that is at least one class lower than the reference compound or at least two classes lower than the reference compound. Included are a Class 1 co-crystal of a Class 2 reference compound, a Class 2 co-crystal of a Class 3 reference compound, a Class 3 co-crystal of a Class 4 reference compound, a Class 1 co-crystal of a Class 3 reference compound, a Class 1 co-crystal of a Class 4 reference compound, or a Class 2 co-crystal of a Class 4 reference compound.

Further included in the present invention are co-crystals that have a hygroscopicity (according to the European Pharmacopoeia Technical Guide) that is at least one class lower than the reference compound or at least two classes lower than the reference compound. Non-limiting examples include; a slightly hygroscopic co-crystal of a hygroscopic reference compound, a hygroscopic co-crystal of a very hygroscopic reference compound, a very hygroscopic co-crystal of a deliquescent reference compound, a slightly hygroscopic co-crystal of a very hygroscopic reference compound, a slightly hygroscopic co-crystal of a deliquescent reference compound, and a hygroscopic co-crystal of a deliquescent reference compound.

#### Crystallizing Amorphous Compounds

In a further aspect, the present invention provides a process for crystallizing an amorphous compound, which process comprises:

(1) grinding, heating, co-subliming, co-melting, or contacting in solution the API with a co-crystal former under crystallization conditions, so as to form a co-crystal of the API and the co-crystal former; and

(2) isolating co-crystals comprising the API and the co-crystal former.

An amorphous compound includes compounds that do not crystallize using routine methods in the art.

#### Decreasing Form Diversity

In a still further embodiment aspect the present invention provides a process for reducing the form diversity of an API, which process comprises:

(1) grinding, heating, co-subliming, co-melting, or contacting in solution the API with a co-crystal former under crystallization conditions, so as to form a co-crystal of the API and the co-crystal former; and

(2) isolating co-crystals comprising the API and the co-crystal former.

For purposes of the present invention, the number of forms of a co-crystal is compared to the number of forms of a reference compound (e.g. the free form or a salt of the API) that can be made using routine methods in the art.

#### Morphology Modulation

In a still further aspect the present invention provides a process for modifying the morphology of an API, which process comprises:

(1) grinding, heating, co-subliming, co-melting, or contacting in solution the API with a co-crystal former under crystallization conditions, so as to form a co-crystal of the API and the co-crystal former; and

(2) isolating co-crystals comprising the API and the co-crystal former.

In an embodiment the co-crystal comprises or consists of a co-crystal former and a pharmaceutical wherein the interaction between the two, e.g., H-bonding, occurs between a functional group of Table III of an API with a corresponding interacting group of Table III. In a further embodiment, the co-crystal comprises a co-crystal former of



Table I or II and an API with a corresponding interacting group of Table III. In a further embodiment the co-crystal comprises an API from Table IV and a co-crystal former with a functional group of Table III. In a further embodiment, the co-crystal is from Table I or II. In an aspect of the invention, only co-crystals having an H-bond acceptor on the first molecule and an H-bond donor on the second molecule, where the first and second molecules are either co-crystal former and API respectively or API and co-crystal former respectively, are included in the present invention. Table IV includes the CAS number, chemical name or a PCT or patent reference (each incorporated herein in their entireties). Thus, whether a particular API contains an H-bond donor, acceptor or both is readily apparent.

In another embodiment, the co-crystal former and API each have only one H-bond donor/acceptor. In another aspect, the molecular weight of the API is less than 2000, 1500, 1000, 750, 500, 350, 200, or 150 Daltons. In another embodiment, the molecular weight of the API is between 100-200, 200-300, 300-400, 400-500, 500-600, 600-700, 700-800, 800-900, 900-1000, 1000-1200, 1200-1400, 1400-1600, 1600-1800, or 1800-2000. APIs with the above molecular weights may also be specifically excluded from the present invention.

The hydrogen bond donor moieties of a co-crystal can include, but are not limited to, any one, any two, any three, any four, or more of the following: amino-pyridine, primary amine, secondary amine, sulfonamide, primary amide, secondary amide, alcohol, and carboxylic acid. The hydrogen bond acceptor moieties of a co-crystal can include, but are not limited to, any one, any two, any three, any four, or more of the following: amino-pyridine, primary amine, secondary amine, sulfonamide, primary amide, secondary amide, alcohol, carboxylic acid, carbonyl, cyano, dimethoxyphenyl, sulfonyl, aromatic nitrogen (6 membered ring), ether, chloride, organochloride, bromide, organobromide, and organoiodide. Hydrogen bonds are known to form many supramolecular structures including, but not limited to, a catemer, a dimer, a trimer, a tetramer, or a higher order structure. Tables V-XXI list specific hydrogen bond donor and acceptor moieties and their approximate interaction distances from the electromagnetic donor atom through the hydrogen atom to the electromagnetic acceptor atom. For example, Table V lists functional groups that are known to hydrogen bond

with amino-pyridines. Amino-pyridines comprise two distinct sites of hydrogen bond donation/acceptance. Both the aromatic nitrogen atom (Npy) and the amine group (NH<sub>2</sub>) can participate in hydrogen bonds. The ability of a given functional group to participate in a hydrogen bond as a donor or as an acceptor or both can be determined by inspection by those skilled in the art.

The data included in Tables V-XXI are taken from an analysis of solid-state structures as reported in the Cambridge Structural Database (CSD). These data include a number of hydrogen bonding interactions between many functional groups and their associated interaction distances.

Table V- Hydrogen bonding functional groups with amino-pyridines and associated interaction distances

Functional Group	Interaction Distances (angstroms)	Mean	Standard Deviation
Primary Amide (to NH <sub>2</sub> )	3.07	N/A	N/A
Primary Amide (to Npy)	2.97	N/A	N/A
Secondary Amide (to NH <sub>2</sub> )	2.75-3.17	N/A	N/A
Secondary Amide (to Npy)	2.70-3.20	2.92	0.07
Carboxylic Acid (to NH <sub>2</sub> )	2.72-3.07	2.89	0.08
Carboxylic Acid (to Npy)	2.54-2.82	2.67	0.05
Water (to NH <sub>2</sub> )	2.72-3.15	2.94	0.09
Water (to Npy)	2.65-3.15	2.87	0.10
Alcohol (to NH <sub>2</sub> )	2.78-3.14	2.96	0.08
Alcohol (to Npy)	2.63-3.06	2.79	0.07
Primary Amine	2.85-3.25	3.05	0.07
Secondary Amine	2.83-3.25	2.93	0.05
Carbonyl	2.87-3.10	2.95	0.07
Sulfoxo	2.70-3.10	2.90	0.08
Ether	2.84-3.20	3.05	0.07
Ester (C-O-C)	3.09	N/A	N/A
Ester (C=O)	2.85-3.16	3.00	0.08
Aromatic N	2.78-3.25	3.04	0.07
Cyano	2.83-3.30	3.09	0.12
Nitro	2.85-3.28	3.08	0.11
Chloride	3.10-3.45	3.25	0.08
Bromide	3.27-3.48	3.39	0.05

Table VI- Hydrogen bonding functional groups with primary amines and associated interaction distances

Functional Group	Interaction Distances (angstroms)	Mean	Standard Deviation
Primary Amide	2.73-3.20	2.98	0.13
Secondary Amide	2.65-3.20	2.97	0.09
Carboxylic Acid (O=C)	2.74-3.15	2.94	0.09

Carboxylic Acid (OH)	2.72-3.12	2.95	0.11
Amino-pyridine	3.10-3.24	3.22	0.02
Sulfonamide	2.86-3.17	3.02	0.11
Water	2.65-3.17	2.95	0.10
Alcohol	2.63-3.26	2.98	0.15
Carbonyl	2.64-3.15	2.95	0.09
Sulfoxo	2.70-3.10	2.92	0.09
Sulfonyl	2.93-3.12	3.13	0.12
Ether	2.75-3.25	3.05	0.11
Ester (C-O-C)	2.90-3.20	3.11	0.07
Ester (O=C)	2.74-3.27	3.04	0.12
Aromatic N	2.92-3.26	3.07	0.07
Cyano	2.83-3.30	3.02	0.06
Nitro	2.75-3.17	3.05	0.08
Chloride	3.07-3.50	3.28	0.09
Bromide	3.23-3.60	3.43	0.08

Table VII- Hydrogen bonding functional groups with primary sulfonamides and associated interaction distances

Functional Group	Interaction Distances (angstroms)	Mean	Standard Deviation
Water	2.87	N/A	N/A
Alcohol	2.85-3.07	2.94	0.06
Primary Amine	2.85-3.20	3.02	0.10
Secondary Amine	2.85-3.20	3.03	0.10
Sulfonyl	2.85-3.20	3.03	0.12
Ether	2.90-3.20	3.07	0.08
Ester	2.85-3.12	2.99	0.07
Cyano	3.00	N/A	N/A
Nitro	3.00-3.20	3.12	0.07
Chloride	3.20-3.32	3.26	0.03

Table VIII- Hydrogen bonding functional groups with primary amides and associated interaction distances

Functional Group	Interaction Distances (angstroms)	Mean	Standard Deviation
Secondary Amide	2.70-3.15	2.935	0.07
Carboxylic Acid (OH)	2.40-2.80	2.560	0.06
Carboxylic Acid (C=O)	2.80-3.25	2.961	0.09
Amino-pyridine (NH <sub>2</sub> )	2.90-3.20	3.069	0.00
Amino-pyridine (Aromatic N)	2.80-3.10	2.972	0.00
Aromatic N	2.90-3.21	3.069	0.07
Water (to C=O)	2.60-3.00	2.813	0.08
Water (to NH <sub>2</sub> )	2.70-3.07	2.945	0.07
Alcohol (to C=O)	2.50-3.00	2.753	0.07
Alcohol (to NH <sub>2</sub> )	2.70-3.10	2.965	0.06
Secondary Amine (to C=O)	2.80-3.10	2.967	0.07
Secondary Amine (to NH <sub>2</sub> )	3.00-3.15	3.079	0.03
Carbonyl	2.80-3.15	2.993	0.08
Sulfonyl	2.90-3.00	2.920	0.00
Ether	2.80-3.10	2.960	0.07

Ester (C=O)	2.70-3.05	2.932	0.05
Cyano	3.00-3.30	3.117	0.07
Nitro	2.90-3.07	3.020	0.03
Chloride	3.10-3.60	3.340	0.08
Bromide	3.30-3.80	3.550	0.11

Table IX- Hydrogen bonding functional groups with secondary amides and associated interaction distances

Functional Group	Interaction Distances (angstroms)	Mean	Standard Deviation
Primary Amide	2.70-3.15	2.935	0.07
Carboxylic Acid (C=O)	2.70-3.10	2.920	0.09
Carboxylic Acid (OH)	2.40-3.05	2.606	0.05
Amino-pyridine (Aromatic N)	2.70-3.20	2.920	0.07
Amino-pyridine (NH <sub>2</sub> )	2.75-3.17	2.920	0.08
Sulfonamide (S=O)	2.80-3.20	3.110	0.16
Sulfonamide (NH <sub>2</sub> )	2.70-3.00	2.916	0.05
Aromatic N	2.60-3.15	2.955	0.09
Water (to C=O)	2.40-3.10	2.840	0.09
Water (to NH <sub>2</sub> )	2.60-3.10	2.887	0.10
Alcohol (to C=O)	2.50-3.04	2.773	0.09
Alcohol (to NH <sub>2</sub> )	2.50-3.20	2.933	0.11
Primary Amine	2.65-3.20	2.970	0.09
Secondary Amine	2.60-3.15	2.932	0.11
Carbonyl	2.70-3.07	2.937	0.08
Sulfonyl	2.60-3.25	3.080	0.09
Ether	2.70-3.16	2.992	0.09
Ester	2.80-3.16	2.986	0.09
Cyano	2.90-3.30	3.120	0.09
Nitro	2.80-3.10	2.993	0.08
Chloride	2.90-3.40	3.261	0.15
Bromide	3.10-3.50	3.394	0.11

Table X- Hydrogen bonding functional groups with alcohols and associated interaction distances

Functional Group	Interaction Distances (angstroms)	Mean	Standard Deviation
Primary Amide (C=O)	2.50-3.00	2.753	0.07
Primary Amide (NH <sub>2</sub> )	2.70-3.10	2.965	0.06
Secondary Amide (C=O)	2.50-3.04	2.773	0.09
Secondary Amide (NH <sub>2</sub> )	2.50-3.20	2.933	0.11
Carboxylic Acid (C=O)	2.50-3.00	2.792	0.08
Carboxylic Acid (OH)	2.40-2.90	2.649	0.05
Amino-pyridine (Aromatic N)	2.60-3.06	2.790	0.07
Amino-pyridine (NH <sub>2</sub> )	2.75-3.15	2.960	0.08
Sulfonamide	2.80-3.07	2.940	0.06
Aromatic N	2.50-3.00	2.777	0.08
Water	2.40-3.03	2.787	0.10
Primary Amine	2.60-3.15	2.897	0.13
Secondary Amine	2.60-3.15	2.888	0.13
Carbonyl	2.40-3.05	2.805	0.11
Sulfonyl	2.40-3.15	2.870	0.10
Ether	2.40-3.00	2.841	0.08

Ester	2.50-3.10	2.852	0.10
Cyano	2.40-3.10	2.873	0.09
Nitro	2.45-3.05	2.935	0.08
Chloride	2.60-3.30	3.093	0.07
Bromide	3.00-3.50	3.258	0.07

Table XI- Hydrogen bonding functional groups with carboxylic acids and associated interaction distances

Functional Group	Interaction Distances (angstroms)	Mean	Standard Deviation
Primary Amide (NH <sub>2</sub> )	2.80-3.25	2.961	0.09
Primary Amide (C=O)	2.40-2.80	2.560	0.07
Secondary Amide (NH)	2.70-3.10	2.920	0.09
Secondary Amide (C=O)	2.40-3.05	2.606	0.05
Amino-pyridine (Aromatic N)	2.50-2.80	2.670	0.05
Amino-pyridine (NH <sub>2</sub> )	2.70-3.00	2.890	0.08
Aromatic N	2.54-2.94	2.658	0.06
Water (to C=O)	2.50-3.00	2.830	0.07
Water (to OH)	2.40-3.00	2.626	0.11
Alcohol (to C=O)	2.50-3.00	2.792	0.08
Alcohol (to OH)	2.50-2.90	2.649	0.05
Primary Amine (to C=O)	2.70-3.10	2.959	0.09
Primary Amine (to OH)	2.70-3.10	2.828	0.12
Secondary Amine (to C=O)	2.70-3.10	2.909	0.11
Secondary Amine (to OH)	2.70-3.10	2.727	0.12
Carbonyl	2.40-3.00	2.696	0.08
Ether	2.50-3.00	2.751	0.12
Ester (C=O)	2.40-3.05	2.672	0.07
Ester (C-O-C)	2.40-3.10	2.990	N/A
Cyano	2.50-2.80	2.746	0.09
Nitro	2.70-3.05	2.942	0.10
Chloride	2.80-3.20	3.001	0.05
Bromide	3.00-3.30	3.150	0.05

Table XII- Hydrogen bonding functional groups with carbonyls and associated interaction distances

Functional Group	Interaction Distances (angstroms)	Mean	Standard Deviation
Primary Amide	2.83-3.15	3.96	0.06
Secondary Amide	2.70-3.07	2.93	0.08
Carboxylic Acid	2.40-3.00	2.70	0.08
Amino-pyridine	2.87-3.10	2.95	0.07
Secondary Sulfonamide	2.76-3.22	2.949	0.12
Water	2.55-3.05	2.82	0.10
Alcohol	2.40-3.05	2.80	0.01
Primary Amine	2.64-3.15	2.959	0.09
Secondary Amine	2.64-3.15	2.87	0.01



Table XIII- Hydrogen bonding functional groups with cyano groups and associated interaction distances

Functional Group	Interaction Distances (angstroms)	Mean	Standard Deviation
Primary Amide	3.01-3.30	3.15	0.09
Secondary Amide	2.90-3.30	3.13	N/A
Carboxylic Acid	2.57-3.00	2.75	0.09
Amino-pyridine	2.84-3.33	3.10	0.12
Primary Sulfonamide	2.99	N/A	N/A
Secondary Sulfonamide	2.83-3.00	2.90	0.07
Water	2.78-3.20	2.98	0.01
Alcohol	2.72-3.13	2.89	0.09
Primary Amine	2.84-3.27	3.08	0.09
Secondary Amine	2.84-3.30	3.09	0.12

Table XIV- Hydrogen bonding functional groups with sulfonyl groups and associated interaction distances

Functional Group	Interaction Distances (angstroms)	Mean	Standard Deviation
Primary Amide	2.92	N/A	N/A
Secondary Amide	2.95-3.25	3.08	0.09
Primary Sulfonamide	2.85-3.10	3.00	0.10
Secondary Sulfonamide	2.85-3.20	3.04	N/A
Water	2.84-3.00	2.90	0.05
Alcohol	2.65-3.15	2.87	0.1
Primary Amine	2.93-3.32	3.13	0.12
Secondary Amine	2.75-3.32	3.05	0.12

Table XV- Hydrogen bonding functional groups with aromatic N and associated interaction distances

Functional Group	Interaction Distances (angstroms)	Mean	Standard Deviation
Primary Amide	2.90-3.21	3.07	0.07
Secondary Amide	2.60-3.15	2.96	0.09
Carboxylic Acid	2.54-2.94	2.66	0.06
Amino-pyridine	2.70-3.20	3.04	0.07
Water	2.60-3.15	2.91	0.09
Alcohol	2.50-3.00	2.78	0.08
Primary Amine	2.92-3.26	3.07	0.07
Secondary Amine	2.73-3.25	3.02	0.10

Table XVI- Hydrogen bonding functional groups with ethers and associated interaction distances

Functional Group	Interaction Distances (angstroms)	Mean	Standard Deviation
Primary Amide	2.80-3.10	2.97	0.08
Secondary Amide	2.70-3.16	2.99	0.09
Carboxylic Acid	2.50-3.02	2.75	0.12
Amino-pyridine	2.80-3.20	3.05	0.07
Sulfonamide	0-3.20	3.07	0.08
Water	2.40-3.15	2.94	0.12
Alcohol	2.40-3.00	2.84	0.08
Primary Amine	2.75-3.25	3.05	0.11
Secondary Amine	2.60-3.25	3.05	0.13

Table XVII- Hydrogen bonding functional groups with chlorides and associated interaction distances

Functional Group	Interaction Distances (angstroms)	Mean	Standard Deviation
Primary Amide	3.10-3.60	3.34	0.08
Secondary Amide	2.90-3.30	3.18	0.06
Carboxylic Acid	2.80-3.30	3.00	0.05
Amino-pyridine	3.10-3.45	3.25	0.08
Sulfonamide	0-3.35	3.26	0.03
Water	2.70-3.30	3.17	0.06
Alcohol	2.50-3.30	3.09	0.07
Primary Amine	3.00-3.50	3.28	0.09
Secondary Amine	2.90-3.40	3.20	0.10

Table XVIII- Hydrogen bonding functional groups with organochlorides and associated interaction distances

Functional Group	Interaction Distances (angstroms)	Mean	Standard Deviation
Primary Amide	3.18-3.21	3.20	0.02
Secondary Amide	3.20-3.27	3.25	0.03
Carboxylic Acid	2.90-3.23	3.17	0.07
Amino-pyridine	3.28-3.33	3.31	0.03
Sulfonamide	0-3.50	N/A	N/A
Water	2.79-3.26	3.14	0.15
Alcohol	2.90-3.29	3.17	0.09
Primary Amine	3.21-3.29	3.25	0.05
Secondary Amine	3.26-3.30	3.28	0.02

Table XIX- Hydrogen bonding functional groups with bromides and associated interaction distances

Functional Group	Interaction Distances (angstroms)	Mean	Standard Deviation
Primary Amide	3.30-3.80	3.55	0.11
Secondary Amide	3.10-3.80	3.39	0.11
Carboxylic Acid	3.00-3.30	3.15	0.05
Amino-pyridine	3.20-3.50	3.39	0.05
Alcohol	3.00-3.50	3.26	0.07
Primary Amine	3.20-3.60	3.43	0.08
Secondary Amine	3.10-3.60	3.38	0.10

Table XX- Hydrogen bonding functional groups with organobromides and associated interaction distances

Functional Group	Interaction Distances (angstroms)	Mean	Standard Deviation
Primary Amide	0-3.50	3.24	N/A
Secondary Amide	0-3.50	N/A	N/A
Carboxylic Acid	3.01-3.31	3.20	0.16
Amino-pyridine	0-3.50	3.38	N/A
Sulfonamide	0-3.50	N/A	N/A
Water	3.14-3.27	3.21	0.09
Alcohol	2.90-3.36	3.21	0.12
Primary Amine	0-3.50	3.38	N/A
Secondary Amine	3.20-3.39	3.30	0.12

Table XXI- Hydrogen bonding functional groups with organoiodides and associated interaction distances

Functional Group	Interaction Distances (angstroms)	Mean	Standard Deviation
Primary Amide	0-3.80	N/A	N/A
Secondary Amide	0-3.80	N/A	N/A
Carboxylic Acid	0-3.80	3.59	0.16
Amino-pyridine	0-3.80	3.42	N/A
Aromatic N	2.70-3.23	2.95	0.11
Alcohol	2.90-3.48	3.20	0.20
Primary Amine	3.25-3.42	3.34	0.11
Secondary Amine	2.71-2.87	2.79	0.08

In another embodiment, peptides, proteins, nucleic acids or other biological APIs are excluded from the present invention. In another embodiment, all non-pharmaceutically acceptable co-crystal formers are excluded from the present invention. In another embodiment, organometallic APIs are excluded from the present invention. In another embodiment, a co-crystal former comprising any one or more of the functional groups of Table III may be specifically excluded from the present invention. In another embodiment, any one or more of the co-crystal formers of Table I or II may be specifically excluded from the present invention. Any APIs currently known in the art may also be specifically excluded from the present invention. For example, carbamazepine, itraconazole, nabumetone, fluoxetine, acetaminophen and theophylline can each be specifically excluded from the present invention. In another embodiment, the API is not a salt, is not a non-metal salt, or is not a metal salt, e.g., sodium, potassium, lithium, calcium or magnesium. In another embodiment, the API is a salt, is a non-metal salt, or is a metal salt, e.g., sodium, potassium, lithium, calcium, magnesium. In one embodiment, the API does not contain a halogen. In one embodiment, the API does contain a halogen.

In another embodiment, any one or more of the APIs of Table IV may be specifically excluded from the present invention. Any APIs currently known in the art may also be specifically excluded from the present invention. For example, nabumetone:2,3-naphthalenediol, fluoxetine HCl:benzoic acid, fluoxetine HCl:succinic acid, acetaminophen:piperazine, acetaminophen:theophylline, theophylline:salicylic acid, theophylline:p-hydroxybenzoic acid, theophylline:sorbic acid, theophylline:1-hydroxy-2-naphthoic acid, theophylline:glycolic acid, theophylline:2,5-dihydroxybenzoic acid, theophylline:chloroacetic acid, bis(diphenylhydantoin):9-ethyladenine acetylacetone

solvate, bis(diphenylhydantoin):9-ethyladenine 2,4-pentanedione solvate, 5,5-diphenylbarbituric acid:9-ethyladenine, bis(diphenylhydantoin):9-ethyladenine, 4-aminobenzoic acid:4-aminobenzonitrile, sulfadimidine:salicylic acid, 8-hydroxyquinolinium 4-nitrobenzoate:4-nitrobenzoic acid, sulfaproxyline:caffeine, retro-inverso-isopropyl (2R,3S)-4-cyclohexyl-2-hydroxy-3-(N-((2R)-2-morpholinocarbonylmethyl-3-(1-naphthyl)propionyl)-L-histidylamino)butyrate:cinnamic acid monohydrate, benzoic acid:isonicotinamide, 3-(2-N',N'-(dimethylhydrazino)-4-thiazolylmethylthio)-N''-sulfamoylpropionamidine:maleic acid, diglycine hydrochloride ( $C_2H_5NO_2:C_2H_6NO_2^+Cl^-$ ), octadecanoic acid:3-pyridinecarboxamide, *cis*-N-(3-methyl-1-(2-(1,2,3,4-tetrahydro)naphthyl)-piperidin-4-yl)-N-phenylpropanamide hydrochloride:oxalic acid, *trans*-N-(3-methyl-1-(2-(1,2,3,4-tetrahydro)naphthyl)-piperidin-4-ylum)-N-phenylpropanamide oxalate:oxalic acid dihydrate, bis(1-(3-((4-(2-isopropoxyphenyl)-1-piperazinyl)methyl)benzoyl)piperidine) succinate:succinic acid, bis(*p*-cyanophenyl)imidazolylmethane:succinic acid, *cis*-1-((4-(1-imidazolylmethyl)cyclohexyl)methyl)imidazole:succinic acid, (+)-2-(5,6-dimethoxy-1,2,3,4-tetrahydro-1-naphthyl)imidazoline:(+)-dibenzoyl-D-tartaric acid, raclopride:tartaric acid, 2,6-diamino-9-ethylpurine:5,5-diethylbarbituric acid, 5,5-diethylbarbituric acid:bis(2-aminopyridine), 5,5-diethylbarbituric acid:acetamide, 5,5-diethylbarbituric acid:KI<sub>3</sub>, 5,5-diethylbarbituric acid:urea, bis(barbital):hexamethylphosphoramide, 5,5-diethylbarbituric acid:imidazole, barbital:1-methylimidazole, 5,5-diethylbarbituric acid:N-methyl-2-pyridone, 2,4-diamino-5-(3,4,5-trimethoxybenzyl)-pyrimidine:5,5-diethylbarbituric acid, bis(barbital):caffeine, bis(barbital):1-methylimidazole, bis(beta-cyclodextrin):bis(barbital) hydrate, tetrakis(beta-cyclodextrin):tetrakis(barbital), 9-ethyladenine:5,5-diethylbarbituric acid, barbital:N'-(*p*-cyanophenyl)-N-(*p*-iodophenyl)melamine, barbital:2-amino-4-(*m*-bromophenylamino)-6-chloro-1,3,5-triazine, 5,5-diethylbarbituric acid:N,N'-diphenylmelamine, 5,5-diethylbarbituric acid:N,N'-bis(*p*-chlorophenyl)melamine, N,N'-bis(*p*-bromophenyl)melamine:5,5-diethylbarbituric acid, 5,5-diethylbarbituric acid:N,N'-bis(*p*-iodophenyl)melamine, 5,5-diethylbarbituric acid:N,N'-bis(*p*-tolyl)melamine, 5,5-diethylbarbituric acid:N,N'-bis(*m*-tolyl)melamine, 5,5-diethylbarbituric acid:N,N'-bis(*m*-chlorophenyl)melamine, N,N'-Bis(*m*-methylphenyl)melamine:barbital, N,N'-bis(*m*-



chlorophenyl)melamine:barbital tetrahydrofuran solvate, 5,5-diethylbarbituric acid:N,N'-bis(*tert*-butyl)melamine, 5,5-diethylbarbituric acid:N,N'-di(*tert*-butyl)melamine, 6,6'-diquinolyl ether:5,5-diethylbarbituric acid, 5-*tert*-butyl-2,4,6-triaminopyrimidine:diethylbarbituric acid, N,N'-bis(4-carboxymethylphenyl)melamine:barbital ethanol solvate, N,N'-bis(4-*tert*-butylphenyl)melamine:barbital, tris(5,17-N,N'-bis(4-amino-6-(butylamino)-1,3,5-triazin-2-yl)diamino-11,23-dinitro-25,26,27,28-tetrapropoxycalix(4)arene):hexakis(diethylbarbituric acid) toluene solvate, N,N'-bis(*m*-fluorophenyl)melamine:barbital, N,N'-bis(*m*-bromophenyl)melamine:barbital acetone solvate, N,N'-bis(*m*-iodophenyl)melamine:barbital acetonitrile solvate, N,N'-bis(*m*-trifluoromethylphenyl)melamine:barbital acetonitrile solvate, aminopyrine:barbital, N,N'-bis(4-fluorophenyl)melamine:barbital, N,N'-bis(4-trifluoromethylphenyl)melamine:barbital, 2,4-diamino-5-(3,4,5-trimethoxybenzyl)pyrimidine:barbital, hydroxybutyrate:hydroxyvalerate, 2-aminopyrimidine:succinic acid, 1,3-bis(((6-methylpyrid-2-yl)amino)carbonyl)benzene:glutaric acid, 5-*tert*-butyl-2,4,6-triaminopyrimidine:diethylbarbituric acid, bis(dithiobiuret-S,S')nickel(II):diuracil, platinum 3,3'-dihydroxymethyl-2,2'-bipyridine dichloride:AgF<sub>3</sub>CSO<sub>3</sub>, 4,4'-bipyridyl:isophthalic acid, 4,4'-bipyridyl:1,4-naphthalenedicarboxylic acid, 4,4'-bipyridyl:1,3,5-cyclohexane-tricarboxylic acid, 4,4'-bipyridyl:tricarballic acid, urotropin:azelaic acid, insulin:C8-HI (octanoyl-N<sup>e</sup>-LysB29-human insulin), isonicotinamide:cinnamic acid, isonicotinamide:3-hydroxybenzoic acid, isonicotinamide:3-N,N-dimethylaminobenzoic acid, isonicotinamide:3,5-bis(trifluoromethyl)-benzoic acid, isonicotinamide:d,l-mandelic acid, isonicotinamide:chloroacetic acid, isonicotinamide:fumaric acid monoethyl ester, isonicotinamide:12-bromododecanoic acid, isonicotinamide:fumaric acid, isonicotinamide:succinic acid, isonicotinamide:4-ketopimelic acid, isonicotinamide:thiodiglycolic acid, 1,3,5-cyclohexane-tricarboxylic acid:hexamethyltetramine, 1,3,5-cyclohexane-tricarboxylic acid:4,7-phenanthroline, 4,7-phenanthroline:oxalic acid, 4,7-phenanthroline:terephthalic acid, 4,7-phenanthroline:1,3,5-cyclohexane-tricarboxylic acid, 4,7-phenanthroline:1,4-naphthalenedicarboxylic



acid, pyrazine:methanoic acid, pyrazine:ethanoic acid, pyrazine:propanoic acid, pyrazine:butanoic acid, pyrazine:pentanoic acid, pyrazine:hexanoic acid, pyrazine:heptanoic acid, pyrazine:octanoic acid, pyrazine:nonanoic acid, pyrazine:decanoic acid, diammine-(deoxy-quanyl-quanyl-N<sup>7</sup>,N<sup>7</sup>)-platinum:tris(glycine) hydrate, 2-aminopyrimidine:p-phenylenediacetic acid, bis(2-aminopyrimidin-1-ium)fumarate:fumaric acid, 2-aminopyrimidine:indole-3-acetic acid, 2-aminopyrimidine:N-methylpyrrole-2-carboxylic acid, 2-aminopyrimidine:thiophen-2-carboxylic acid, 2-aminopyrimidine:(+)-camphoric acid, 2,4,6-Trinitrobenzoic acid:2-aminopyrimidine, 2-aminopyrimidine:4-aminobenzoic acid, 2-aminopyrimidine:bis(phenoxyacetic acid), 2-aminopyrimidine:(2,4-dichlorophenoxy)acetic acid, 2-aminopyrimidine:(3,4-dichlorophenoxy)acetic acid, 2-aminopyrimidine:indole-2-carboxylic acid, 2-aminopyrimidine:terephthalic acid, 2-aminopyrimidine:bis(2-nitrobenzoic acid), 2-aminopyrimidine:bis(2-aminobenzoic acid), 2-aminopyrimidine:3-aminobenzoic acid, 2-hexeneoic acid:isonicotinamide, 4-nitrobenzoic acid:isonicotinamide, 3,5-dinitrobenzoic acid:isonicotinamide:4-methylbenzoic acid, 2-amino-5-nitropyrimidine:2-amino-3-nitropyridine, 3,5-dinitrobenzoic acid:4-chlorobenzamide, 3-dimethylaminobenzoic acid:4-chlorobenzamide, fumaric acid:4-chlorobenzamide, oxine:4-nitrobenzoic acid, oxine:3,5-dinitrobenzoic acid, oxine:3,5-dinitrosalicylic acid, 3-[2-(N',N'-dimethylhydrazino)-4-thiazolylmethylthio]-N<sup>2</sup>-sulfamoylpropionamidine:maleic acid, 5-fluorouracil:9-ethylhypoxanthine, 5-fluorouracil:cytosine dihydrate, 5-fluorouracil:theophylline monohydrate, stearic acid:nicotinamide, *cis*-1-{{4-(1-imidazolylmethyl)cyclohexyl}methyl}imidazole:succinic acid, CGS18320B:succinic acid, sulfaproxyline:caffeine, 4-aminobenzoic acid:4-aminobenzonitrile, 3,5-dinitrobenzoic acid:isonicotinamide:3-methylbenzoic acid, 3,5-dinitrobenzoic acid:isonicotinamide:4-(dimethylamino)benzoic acid, 3,5-dinitrobenzoic acid:isonicotinamide:4-hydroxy-3-methoxycinnamic acid, isonicotinamide:oxalic acid, isonicotinamide:malonic acid, isonicotinamide:succinic acid, isonicotinamide:glutaric acid, isonicotinamide:adipic acid, benzoic acid:isonicotinamide, mazapertine:succinate, betaine:dichloronitrophenol, betainepyridine:dichloronitrophenol, betainepyridine:pentachlorophenol, 4-{2-[1-(2-hydroxyethyl)-4-pyridylidene]-

ethylidene}-cyclo-hexa-2,5-dien-1-one:methyl 2,4-dihydroxybenzoate, 4-{2-[1-(2-hydroxyethyl)-4-pyridylidene]-ethylidene}-cyclo-hexa-2,5-dien-1-one:2,4-dihydroxypropiophenone, 4-{2-[1-(2-hydroxyethyl)-4-pyridylidene]-ethylidene}-cyclo-hexa-2,5-dien-1-one:2,4-dihydroxyacetophenone, squaric acid:4,4'-dipyridylacetylene, squaric acid:1,2-bis(4-pyridyl)ethylene, chloranilic acid:1,4-bis[(4-pyridyl)ethynyl]benzene, 4,4'-bipyridine:phthalic acid, 4,4'-dipyridylacetylene:phthalic acid, bis(pentamethylcyclopentadienyl)iron:bromanilic acid, bis(pentamethylcyclopentadienyl)iron:chloranilic acid, bis(pentamethylcyclopentadienyl)iron:cyananilic acid, pyrazinotetrathiafulvalene:chloranilic acid, phenol:pentafluorophenol, co-crystals of *cis*-itraconazole, and co-crystals of topiramate are specifically excluded from the present invention.

In another embodiment, a pharmaceutical composition can be formulated to contain an API in co-crystal form as micronized or nano-sized particles. More specifically, another embodiment couples the processing of a pure API to a co-crystal form with the process of making a controlled particle size for manipulation into a pharmaceutical dosage form. This embodiment combines two processing steps into a single step via techniques such as, but not limited to, grinding, alloying, or sintering (i.e., heating a powder mix). The coupling of these processes overcomes a serious limitation of having to isolate and store the bulk drug that is required for a formulation, which in some cases can be difficult to isolate (e.g., amorphous, chemically or physically unstable).

Excipients employed in pharmaceutical compositions of the present invention can be solids, semi-solids, liquids or combinations thereof. Preferably, excipients are solids. Compositions of the invention containing excipients can be prepared by any known technique of pharmacy that comprises admixing an excipient with an API or therapeutic agent. A pharmaceutical composition of the invention contains a desired amount of API per dose unit and, if intended for oral administration, can be in the form, for example, of a tablet, a caplet, a pill, a hard or soft capsule, a lozenge, a cachet, a dispensable powder, granules, a suspension, an elixir, a dispersion, or any other form reasonably adapted for such administration. If intended for parenteral administration, it can be in the form, for

example, of a suspension or transdermal patch. If intended for rectal administration, it can be in the form, for example, of a suppository. Presently preferred are oral dosage forms that are discrete dose units each containing a predetermined amount of the API, such as tablets or capsules.

In another embodiment, APIs with an inappropriate pH for transdermal patches can be co-crystallized with an appropriate co-crystal former, thereby adjusting its pH to an appropriate level for use as a transdermal patch. In another embodiment, an API's pH level can be optimized for use in a transdermal patch via co-crystallization with an appropriate co-crystal former.

Non-limiting examples follow of excipients that can be used to prepare pharmaceutical compositions of the invention.

Pharmaceutical compositions of the invention optionally comprise one or more pharmaceutically acceptable carriers or diluents as excipients. Suitable carriers or diluents illustratively include, but are not limited to, either individually or in combination, lactose, including anhydrous lactose and lactose monohydrate; starches, including directly compressible starch and hydrolyzed starches (e.g., Celutab<sup>TM</sup> and Emdex<sup>TM</sup>); mannitol; sorbitol; xylitol; dextrose (e.g., Cerelease<sup>TM</sup> 2000) and dextrose monohydrate; dibasic calcium phosphate dihydrate; sucrose-based diluents; confectioner's sugar; monobasic calcium sulfate monohydrate; calcium sulfate dihydrate; granular calcium lactate trihydrate; dextrans; inositol; hydrolyzed cereal solids; amylose; celluloses including microcrystalline cellulose, food grade sources of alpha- and amorphous cellulose (e.g., RexcelJ), powdered cellulose, hydroxypropylcellulose (HPC) and hydroxypropylmethylcellulose (HPMC); calcium carbonate; glycine; bentonite; block co-polymers; polyvinylpyrrolidone; and the like. Such carriers or diluents, if present, constitute in total about 5% to about 99%, preferably about 10% to about 85%, and more preferably about 20% to about 80%, of the total weight of the composition. The carrier, carriers, diluent, or diluents selected preferably exhibit suitable flow properties and, where tablets are desired, compressibility.

Lactose, mannitol, dibasic sodium phosphate, and microcrystalline cellulose (particularly Avicel PH microcrystalline cellulose such as Avicel PH 101), either individually or in combination, are preferred diluents. These diluents are chemically

compatible with many co-crystals described herein. The use of extragranular microcrystalline cellulose (that is, microcrystalline cellulose added to a granulated composition) can be used to improve hardness (for tablets) and/or disintegration time. Lactose, especially lactose monohydrate, is particularly preferred. Lactose typically provides compositions having suitable release rates of co-crystals, stability, pre-compression flowability, and/or drying properties at a relatively low diluent cost. It provides a high density substrate that aids densification during granulation (where wet granulation is employed) and therefore improves blend flow properties and tablet properties.

Pharmaceutical compositions of the invention optionally comprise one or more pharmaceutically acceptable disintegrants as excipients, particularly for tablet formulations. Suitable disintegrants include, but are not limited to, either individually or in combination, starches, including sodium starch glycolate (e.g., Explotab<sup>TM</sup> of PenWest) and pregelatinized corn starches (e.g., National<sup>TM</sup> 1551 of National Starch and Chemical Company, National<sup>TM</sup> 1550, and Colorcon<sup>TM</sup> 1500), clays (e.g., Veegum<sup>TM</sup> HV of R.T. Vanderbilt), celluloses such as purified cellulose, microcrystalline cellulose, methylcellulose, carboxymethylcellulose and sodium carboxymethylcellulose, croscarmellose sodium (e.g., Ac-Di-Sol<sup>TM</sup> of FMC), alginates, crospovidone, and gums such as agar, guar, locust bean, karaya, pectin and tragacanth gums.

Disintegrants may be added at any suitable step during the preparation of the composition, particularly prior to granulation or during a lubrication step prior to compression. Such disintegrants, if present, constitute in total about 0.2% to about 30%, preferably about 0.2% to about 10%, and more preferably about 0.2% to about 5%, of the total weight of the composition.

Croscarmellose sodium is a preferred disintegrant for tablet or capsule disintegration, and, if present, preferably constitutes about 0.2% to about 10%, more preferably about 0.2% to about 7%, and still more preferably about 0.2% to about 5%, of the total weight of the composition. Croscarmellose sodium confers superior intragranular disintegration capabilities to granulated pharmaceutical compositions of the present invention.



Pharmaceutical compositions of the invention optionally comprise one or more pharmaceutically acceptable binding agents or adhesives as excipients, particularly for tablet formulations. Such binding agents and adhesives preferably impart sufficient cohesion to the powder being tableted to allow for normal processing operations such as sizing, lubrication, compression and packaging, but still allow the tablet to disintegrate and the composition to be absorbed upon ingestion. Such binding agents may also prevent or inhibit crystallization or recrystallization of a co-crystal of the present invention once the salt has been dissolved in a solution. Suitable binding agents and adhesives include, but are not limited to, either individually or in combination, acacia; tragacanth; sucrose; gelatin; glucose; starches such as, but not limited to, pregelatinized starches (e.g., National<sup>TM</sup> 1511 and National<sup>TM</sup> 1500); celluloses such as, but not limited to, methylcellulose and carmellose sodium (e.g., Tylose<sup>TM</sup>); alginic acid and salts of alginic acid; magnesium aluminum silicate; PEG; guar gum; polysaccharide acids; bentonites; povidone, for example povidone K-15, K-30 and K-29/32; polymethacrylates; HPMC; hydroxypropylcellulose (e.g., Klucel<sup>TM</sup> of Aqualon); and ethylcellulose (e.g., Ethocel<sup>TM</sup> of the Dow Chemical Company). Such binding agents and/or adhesives, if present, constitute in total about 0.5% to about 25%, preferably about 0.75% to about 15%, and more preferably about 1% to about 10%, of the total weight of the pharmaceutical composition.

Many of the binding agents are polymers comprising amide, ester, ether, alcohol or ketone groups and, as such, are preferably included in pharmaceutical compositions of the present invention. Polyvinylpyrrolidones such as povidone K-30 are especially preferred. Polymeric binding agents can have varying molecular weight, degrees of crosslinking, and grades of polymer. Polymeric binding agents can also be copolymers, such as block co-polymers that contain mixtures of ethylene oxide and propylene oxide units. Variation in these units' ratios in a given polymer affects properties and performance. Examples of block co-polymers with varying compositions of block units are Poloxamer 188 and Poloxamer 237 (BASF Corporation).

Pharmaceutical compositions of the invention optionally comprise one or more pharmaceutically acceptable wetting agents as excipients. Such wetting agents are preferably selected to maintain the co-crystal in close association with water, a condition



that is believed to improve bioavailability of the composition. Such wetting agents can also be useful in solubilizing or increasing the solubility of co-crystals.

Non-limiting examples of surfactants that can be used as wetting agents in pharmaceutical compositions of the invention include quaternary ammonium compounds, for example benzalkonium chloride, benzethonium chloride and cetylpyridinium chloride, dioctyl sodium sulfosuccinate, polyoxyethylene alkylphenyl ethers, for example nonoxynol 9, nonoxynol 10, and degrees Ctoxynol 9, poloxamers (polyoxyethylene and polyoxypropylene block copolymers), polyoxyethylene fatty acid glycerides and oils, for example polyoxyethylene (8) caprylic/capric mono- and diglycerides (e.g., Labrasol<sup>TM</sup> of Gattefosse), polyoxyethylene (35) castor oil and polyoxyethylene (40) hydrogenated castor oil; polyoxyethylene alkyl ethers, for example polyoxyethylene (20) cetostearyl ether, polyoxyethylene fatty acid esters, for example polyoxyethylene (40) stearate, polyoxyethylene sorbitan esters, for example polysorbate 20 and polysorbate 80 (e.g., Tween<sup>TM</sup> 80 of ICI), propylene glycol fatty acid esters, for example propylene glycol laurate (e.g., Lauroglycol<sup>TM</sup> of Gattefosse), sodium lauryl sulfate, fatty acids and salts thereof, for example oleic acid, sodium oleate and triethanolamine oleate, glyceryl fatty acid esters, for example glyceryl monostearate, sorbitan esters, for example sorbitan monolaurate, sorbitan monooleate, sorbitan monopalmitate and sorbitan monostearate, tyloxapol, and mixtures thereof. Such wetting agents, if present, constitute in total about 0.25% to about 15%, preferably about 0.4% to about 10%, and more preferably about 0.5% to about 5%, of the total weight of the pharmaceutical composition.

Wetting agents that are anionic surfactants are preferred. Sodium lauryl sulfate is a particularly preferred wetting agent. Sodium lauryl sulfate, if present, constitutes about 0.25% to about 7%, more preferably about 0.4% to about 4%, and still more preferably about 0.5% to about 2%, of the total weight of the pharmaceutical composition.

Pharmaceutical compositions of the invention optionally comprise one or more pharmaceutically acceptable lubricants (including anti-adherents and/or glidants) as excipients. Suitable lubricants include, but are not limited to, either individually or in combination, glyceryl behapate (e.g., Compritol<sup>TM</sup> 888 of Gattefosse); stearic acid and salts thereof, including magnesium, calcium and sodium stearates; hydrogenated vegetable oils (e.g., Sterotex<sup>TM</sup> of Abitec); colloidal silica; talc; waxes; boric acid;

sodium benzoate; sodium acetate; sodium fumarate; sodium chloride; DL-leucine; PEG (e.g., Carbowax<sup>TM</sup> 4000 and Carbowax<sup>TM</sup> 6000 of the Dow Chemical Company); sodium oleate; sodium lauryl sulfate; and magnesium lauryl sulfate. Such lubricants, if present, constitute in total about 0.1% to about 10%, preferably about 0.2% to about 8%, and more preferably about 0.25% to about 5%, of the total weight of the pharmaceutical composition.

Magnesium stearate is a preferred lubricant used, for example, to reduce friction between the equipment and granulated mixture during compression of tablet formulations.

Suitable anti-adherents include, but are not limited to, talc, cornstarch, DL-leucine, sodium lauryl sulfate and metallic stearates. Talc is a preferred anti-adherent or glidant used, for example, to reduce formulation sticking to equipment surfaces and also to reduce static in the blend. Talc, if present, constitutes about 0.1% to about 10%, more preferably about 0.25% to about 5%, and still more preferably about 0.5% to about 2%, of the total weight of the pharmaceutical composition.

Glidants can be used to promote powder flow of a solid formulation. Suitable glidants include, but are not limited to, colloidal silicon dioxide, starch, talc, tribasic calcium phosphate, powdered cellulose and magnesium trisilicate. Colloidal silicon dioxide is particularly preferred.

Other excipients such as colorants, flavors and sweeteners are known in the pharmaceutical art and can be used in pharmaceutical compositions of the present invention. Tablets can be coated, for example with an enteric coating, or uncoated. Compositions of the invention can further comprise, for example, buffering agents. Optionally, one or more effervescent agents can be used as disintegrants and/or to enhance organoleptic properties of pharmaceutical compositions of the invention. When present in pharmaceutical compositions of the invention to promote dosage form disintegration, one or more effervescent agents are preferably present in a total amount of about 30% to about 75%, and preferably about 45% to about 70%, for example about 60%, by weight of the pharmaceutical composition.

According to a particularly preferred embodiment of the invention, an effervescent agent, present in a solid dosage form in an amount less than that effective to

promote disintegration of the dosage form, provides improved dispersion of the API in an aqueous medium. Without being bound by theory, it is believed that the effervescent agent is effective to accelerate dispersion of the API from the dosage form in the gastrointestinal tract, thereby further enhancing absorption and rapid onset of therapeutic effect. When present in a pharmaceutical composition of the invention to promote intragastric dispersion but not to enhance disintegration, an effervescent agent is preferably present in an amount of about 1% to about 20%, more preferably about 2.5% to about 15%, and still more preferably about 5% to about 10%, by weight of the pharmaceutical composition.

An "effervescent agent" herein is an agent comprising one or more compounds which, acting together or individually, evolve a gas on contact with water. The gas evolved is generally oxygen or, most commonly, carbon dioxide. Preferred effervescent agents comprise an acid and a base that react in the presence of water to generate carbon dioxide gas. Preferably, the base comprises an alkali metal or alkaline earth metal carbonate or bicarbonate and the acid comprises an aliphatic carboxylic acid.

Non-limiting examples of suitable bases as components of effervescent agents useful in the invention include carbonate salts (e.g., calcium carbonate), bicarbonate salts (e.g., sodium bicarbonate), sesquicarbonate salts, and mixtures thereof. Calcium carbonate is a preferred base.

Non-limiting examples of suitable acids as components of effervescent agents and/or solid organic acids useful in the invention include citric acid, tartaric acid (as D-, L-, or D/L-tartaric acid), malic acid (as D-, L-, or DL-malic acid), maleic acid, fumaric acid, adipic acid, succinic acid, acid anhydrides of such acids, acid salts of such acids, and mixtures thereof. Citric acid is a preferred acid.

In a preferred embodiment of the invention, where the effervescent agent comprises an acid and a base, the weight ratio of the acid to the base is about 1:100 to about 100:1, more preferably about 1:50 to about 50:1, and still more preferably about 1:10 to about 10:1. In a further preferred embodiment of the invention, where the effervescent agent comprises an acid and a base, the ratio of the acid to the base is approximately stoichiometric.

Excipients which solubilize APIs typically have both hydrophilic and hydrophobic regions, or are preferably amphiphilic or have amphiphilic regions. One type of amphiphilic or partially-amphiphilic excipient comprises an amphiphilic polymer or is an amphiphilic polymer. A specific amphiphilic polymer is a polyalkylene glycol, which is commonly comprised of ethylene glycol and/or propylene glycol subunits. Such polyalkylene glycols can be esterified at their termini by a carboxylic acid, ester, acid anhydride or other suitable moiety. Examples of such excipients include poloxamers (symmetric block copolymers of ethylene glycol and propylene glycol; e.g., poloxamer 237), polyalkylene glycolated esters of tocopherol (including esters formed from a di- or multi-functional carboxylic acid; e.g., d-alpha-tocopherol polyethylene glycol-1000 succinate), and macroglycerides (formed by alcoholysis of an oil and esterification of a polyalkylene glycol to produce a mixture of mono-, di- and tri-glycerides and mono- and di-esters; e.g., stearyl macrogol-32 glycerides). Such pharmaceutical compositions are advantageously administered orally.

Pharmaceutical compositions of the present invention can comprise about 10 % to about 50 %, about 25 % to about 50 %, about 30 % to about 45 %, or about 30 % to about 35 % by weight of a co-crystal; about 10 % to about 50 %, about 25 % to about 50 %, about 30 % to about 45 %, or about 30 % to about 35 % by weight of an excipient which inhibits crystallization in aqueous solution, in simulated gastric fluid, or in simulated intestinal fluid; and about 5 % to about 50 %, about 10 % to about 40 %, about 15 % to about 35 %, or about 30 % to about 35 % by weight of a binding agent. In one example, the weight ratio of the co-crystal to the excipient which inhibits crystallization to binding agent is about 1 to 1 to 1.

Solid dosage forms of the invention can be prepared by any suitable process, not limited to processes described herein.

An illustrative process comprises (a) a step of blending an API of the invention with one or more excipients to form a blend, and (b) a step of tableting or encapsulating the blend to form tablets or capsules, respectively.

In a preferred process, solid dosage forms are prepared by a process comprising (a) a step of blending a co-crystal of the invention with one or more excipients to form a blend, (b) a step of granulating the blend to form a granulate, and (c) a step of tableting or



encapsulating the blend to form tablets or capsules respectively. Step (b) can be accomplished by any dry or wet granulation technique known in the art, but is preferably a dry granulation step. A salt of the present invention is advantageously granulated to form particles of about 1 micrometer to about 100 micrometer, about 5 micrometer to about 50 micrometer, or about 10 micrometer to about 25 micrometer. One or more diluents, one or more disintegrants and one or more binding agents are preferably added, for example in the blending step, a wetting agent can optionally be added, for example in the granulating step, and one or more disintegrants are preferably added after granulating but before tableting or encapsulating. A lubricant is preferably added before tableting. Blending and granulating can be performed independently under low or high shear. A process is preferably selected that forms a granulate that is uniform in API content, that readily disintegrates, that flows with sufficient ease so that weight variation can be reliably controlled during capsule filling or tableting, and that is dense enough in bulk so that a batch can be processed in the selected equipment and individual doses fit into the specified capsules or tablet dies.

In an alternative embodiment, solid dosage forms are prepared by a process that includes a spray drying step, wherein an API is suspended with one or more excipients in one or more sprayable liquids, preferably a non-protic (e.g., non-aqueous or non-alcoholic) sprayable liquid, and then is rapidly spray dried over a current of warm air. A granulate or spray dried powder resulting from any of the above illustrative processes can be compressed or molded to prepare tablets or encapsulated to prepare capsules. Conventional tableting and encapsulation techniques known in the art can be employed. Where coated tablets are desired, conventional coating techniques are suitable. Excipients for tablet compositions of the invention are preferably selected to provide a disintegration time of less than about 30 minutes, preferably about 25 minutes or less, more preferably about 20 minutes or less, and still more preferably about 15 minutes or less, in a standard disintegration assay.

Pharmaceutically acceptable co-crystals can be administered by controlled-, sustained-, or delayed-release means. Controlled-release pharmaceutical products have a common goal of improving drug therapy over that achieved by their non-controlled release counterparts. Ideally, the use of an optimally designed controlled-release



preparation in medical treatment is characterized by a minimum of drug substance being employed to cure or control the condition in a minimum amount of time. Advantages of controlled-release formulations include: 1) extended activity of the drug; 2) reduced dosage frequency; 3) increased patient compliance; 4) usage of less total drug; 5) reduction in local or systemic side effects; 6) minimization of drug accumulation; 7) reduction in blood level fluctuations; 8) improvement in efficacy of treatment; 9) reduction of potentiation or loss of drug activity; and 10) improvement in speed of control of diseases or conditions. (Kim, Cherng-ju, Controlled Release Dosage Form Design, 2 Technomic Publishing, Lancaster, Pa.: 2000).

Conventional dosage forms generally provide rapid or immediate drug release from the formulation. Depending on the pharmacology and pharmacokinetics of the drug, use of conventional dosage forms can lead to wide fluctuations in the concentrations of the drug in a patient's blood and other tissues. These fluctuations can impact a number of parameters, such as dose frequency, onset of action, duration of efficacy, maintenance of therapeutic blood levels, toxicity, side effects, and the like. Advantageously, controlled-release formulations can be used to control a drug's onset of action, duration of action, plasma levels within the therapeutic window, and peak blood levels. In particular, controlled- or extended-release dosage forms or formulations can be used to ensure that the maximum effectiveness of a drug is achieved while minimizing potential adverse effects and safety concerns, which can occur both from under dosing a drug (i.e., going below the minimum therapeutic levels) as well as exceeding the toxicity level for the drug.

Most controlled-release formulations are designed to initially release an amount of drug (active ingredient) that promptly produces the desired therapeutic effect, and gradually and continually release other amounts of drug to maintain this level of therapeutic or prophylactic effect over an extended period of time. In order to maintain this constant level of drug in the body, the drug must be released from the dosage form at a rate that will replace the amount of drug being metabolized and excreted from the body. Controlled-release of an active ingredient can be stimulated by various conditions including, but not limited to, pH, ionic strength, osmotic pressure, temperature, enzymes, water, and other physiological conditions or compounds.

A variety of known controlled- or extended-release dosage forms, formulations, and devices can be adapted for use with the co-crystals and compositions of the invention. Examples include, but are not limited to, those described in U.S. Pat. Nos.: 3,845,770; 3,916,899; 3,536,809; 3,598,123; 4,008,719; 5,674,533; 5,059,595; 5,591,767; 5,120,548; 5,073,543; 5,639,476; 5,354,556; 5,733,566; and 6,365,185 B1; each of which is incorporated herein by reference. These dosage forms can be used to provide slow or controlled-release of one or more active ingredients using, for example, hydroxypropylmethyl cellulose, other polymer matrices, gels, permeable membranes, osmotic systems (such as OROS® (Alza Corporation, Mountain View, Calif. USA)), multilayer coatings, microparticles, liposomes, or microspheres or a combination thereof to provide the desired release profile in varying proportions. Additionally, ion exchange materials can be used to prepare immobilized, adsorbed co-crystals and thus effect controlled delivery of the drug. Examples of specific anion exchangers include, but are not limited to, Duolite® A568 and Duolite® AP143 (Rohm & Haas, Spring House, PA. USA).

One embodiment of the invention encompasses a unit dosage form which comprises a pharmaceutically acceptable co-crystal, or a solvate, hydrate, dehydrate, anhydrous, or amorphous form thereof, and one or more pharmaceutically acceptable excipients or diluents, wherein the pharmaceutical composition or dosage form is formulated for controlled-release. Specific dosage forms utilize an osmotic drug delivery system.

A particular and well-known osmotic drug delivery system is referred to as OROS® (Alza Corporation, Mountain View, Calif. USA). This technology can readily be adapted for the delivery of compounds and compositions of the invention. Various aspects of the technology are disclosed in U.S. Pat. Nos. 6,375,978 B1; 6,368,626 B1; 6,342,249 B1; 6,333,050 B2; 6,287,295 B1; 6,283,953 B1; 6,270,787 B1; 6,245,357 B1; and 6,132,420; each of which is incorporated herein by reference. Specific adaptations of OROS® that can be used to administer compounds and compositions of the invention include, but are not limited to, the OROS® Push-Pull™, Delayed Push-Pull™, Multi-Layer Push-Pull™, and Push-Stick™ Systems, all of which are well known. See, e.g., <http://www.alza.com>. Additional OROS® systems that can be used for the controlled oral

delivery of compounds and compositions of the invention include OROS®-CT and L-OROS®. *Id.*; see also, *Delivery Times*, vol. II, issue II (Alza Corporation).

Conventional OROS® oral dosage forms are made by compressing a drug powder (e.g. co-crystal) into a hard tablet, coating the tablet with cellulose derivatives to form a semi-permeable membrane, and then drilling an orifice in the coating (e.g., with a laser). Kim, Cherng-ju, *Controlled Release Dosage Form Design*, 231-238 (Technomic Publishing, Lancaster, Pa.: 2000). The advantage of such dosage forms is that the delivery rate of the drug is not influenced by physiological or experimental conditions. Even a drug with a pH-dependent solubility can be delivered at a constant rate regardless of the pH of the delivery medium. But because these advantages are provided by a build-up of osmotic pressure within the dosage form after administration, conventional OROS® drug delivery systems cannot be used to effectively deliver drugs with low water solubility. *Id.* at 234. Because co-crystals of this invention can be far more soluble in water than the API itself, they are well suited for osmotic-based delivery to patients. This invention does, however, encompass the incorporation of conventional crystalline API (e.g. pure API without co-crystal former), and non-salt isomers and isomeric mixtures thereof, into OROS® dosage forms.

A specific dosage form of the invention comprises: a wall defining a cavity, the wall having an exit orifice formed or formable therein and at least a portion of the wall being semipermeable; an expandable layer located within the cavity remote from the exit orifice and in fluid communication with the semipermeable portion of the wall; a dry or substantially dry state drug layer located within the cavity adjacent to the exit orifice and in direct or indirect contacting relationship with the expandable layer; and a flow-promoting layer interposed between the inner surface of the wall and at least the external surface of the drug layer located within the cavity, wherein the drug layer comprises a co-crystal, or a solvate, hydrate, dehydrate, anhydrous, or amorphous form thereof. See U.S. Pat. No. 6,368,626, the entirety of which is incorporated herein by reference.

Another specific dosage form of the invention comprises: a wall defining a cavity, the wall having an exit orifice formed or formable therein and at least a portion of the wall being semipermeable; an expandable layer located within the cavity remote from the exit orifice and in fluid communication with the semipermeable portion of the wall; a

drug layer located within the cavity adjacent the exit orifice and in direct or indirect contacting relationship with the expandable layer; the drug layer comprising a liquid, active agent formulation absorbed in porous particles, the porous particles being adapted to resist compaction forces sufficient to form a compacted drug layer without significant exudation of the liquid, active agent formulation, the dosage form optionally having a placebo layer between the exit orifice and the drug layer, wherein the active agent formulation comprises a co-crystal, or a solvate, hydrate, dehydrate, anhydrous, or amorphous form thereof. See U.S. Pat. No. 6,342,249, the entirety of which is incorporated herein by reference.

The invention will now be described in further detail, by way of example, with reference to the accompanying drawings.

## EXEMPLIFICATION

### General Methods for the Preparation of Co-Crystals

#### a) High Throughput crystallization using the CrystalMax™ platform

CrystalMax™ comprises a sequence of automated, integrated high throughput robotic stations capable of rapid generation, identification and characterization of polymorphs, salts, and co-crystals of APIs and API candidates. Worksheet generation and combinatorial mixture design is carried out using proprietary design software Architect™. Typically, an API or an API candidate is dispensed from an organic solvent into tubes and dried under a stream of nitrogen. Salts and/or co-crystal formers may also be dispensed and dried in the same fashion. Water and organic solvents may be combinatorially dispensed into the tubes using a multi-channel dispenser. Each tube in a 96-tube array is then sealed within 15 seconds of combinatorial dispensing to avoid solvent evaporation. The mixtures are then rendered supersaturated by heating to 70 degrees C for 2 hours followed by a 1 degree C/minute cooling ramp to 5 degrees C. Optical checks are then conducted to detect crystals and/or solid material. Once a solid has been identified in a tube, it is isolated through aspiration and drying. Raman spectra

are then obtained on the solids and cluster classification of the spectral patterns is performed using proprietary software (Inquire™).

b) Crystallization from solution

Co-crystals may be obtained by dissolving the separate components in a solvent and adding one to the other. The co-crystal may then precipitate or crystallize as the solvent mixture is evaporated slowly. The co-crystal may also be obtained by dissolving the two components in the same solvent or a mixture of solvents.

c) Crystallization from the melt (Co-melting)

A co-crystal may be obtained by melting the two components together (i.e., co-melting) and allowing recrystallization to occur. In some cases, an anti-solvent may be added to facilitate crystallization.

d) Thermal microscopy

A co-crystal may be obtained by melting the higher melting component on a glass slide and allowing it to recrystallize. The second component is then melted and is also allowed to recrystallize. The co-crystal may form as a separated phase/band in between the eutectic bands of the two original components.

e) Mixing and/or grinding

A co-crystal may be obtained by mixing or grinding two components together in the solid state.

f) Co-sublimation

A co-crystal may be obtained by co-subliming a mixture of an API and a co-crystal former in the same sample cell as an intimate mixture either by heating, mixing or placing the mixture under vacuum. A co-crystal may also be obtained by co-sublimation using a Kneudsen apparatus where the API and the co-crystal former are contained in separate sample cells, connected to a single cold finger, each of the sample cells is



maintained at the same or different temperatures under a vacuum atmosphere in order to co-sublime the two components onto the cold-finger forming the desired co-crystal.

### Analytical Methods

#### Procedure for DSC analysis

DSC analysis of the samples was performed using a Q1000 Differential Scanning Calorimeter (TA Instruments, New Castle, DE, U.S.A.), which uses Advantage for QW-Series, version 1.0.0.78, Thermal Advantage Release 2.0 (2001 TA Instruments-Water LLC). In addition, the analysis software used was Universal Analysis 2000 for Windows 95/95/2000/NT, version 3.1E;Build 3.1.0.40 (2001 TA Instruments-Water LLC).

For the DSC analysis, the purge gas used was dry nitrogen, the reference material was an empty aluminum pan that was crimped, and the sample purge was 50 mL/minute.

DSC analysis of the sample was performed by placing  $\leq 2$  mg of sample in an aluminum pan with a crimped pan closure. The starting temperature was typically 20 degrees C with a heating rate of 10 degrees C/minute, and the ending temperature was 300 degrees C. Unless otherwise indicated, all reported transitions are as stated  $\pm 1.0$  degrees C.

#### Procedure for TGA analysis

TGA analysis of samples was performed using a Q500 Thermogravimetric Analyzer (TA Instruments, New Castle, DE, U.S.A.), which uses Advantage for QW-Series, version 1.0.0.78, Thermal Advantage Release 2.0 (2001 TA Instruments-Water LLC). In addition, the analysis software used was Universal Analysis 2000 for Windows 95/95/2000/NT, version 3.1E;Build 3.1.0.40 (2001 TA Instruments-Water LLC).

For all of the TGA experiments, the purge gas used was dry nitrogen, the balance purge was 40 mL/minute N<sub>2</sub>, and the sample purge was 60 mL/minute N<sub>2</sub>.

TGA of the sample was performed by placing  $\leq 2$  mg of sample in a platinum pan. The starting temperature was typically 20 degrees C with a heating rate of 10 degrees C/minute, and the ending temperature was 300 degrees C.

### Procedure for PXRD analysis

A powder X-ray diffraction pattern for the samples was obtained using a D/Max Rapid, Contact (Rigaku/MSO, The Woodlands, TX, U.S.A.), which uses as its control software RINT Rapid Control software, Rigaku Rapid/XRD, version 1.0.0 (1999 Rigaku Co.). In addition, the analysis software used were RINT Rapid display software, version 1.18 (Rigaku/MSO), and JADE XRD Pattern Processing, versions 5.0 and 6.0 ((1995-2002, Materials Data, Inc.).

For the PXRD analysis, the acquisition parameters were as follows: source was Cu with a K line at 1.5406Å; x-y stage was manual; collimator size was 0.3 or 0.8 mm; capillary tube (Charles Supper Company, Natick, MA, U.S.A.) was 0.3 mm ID; reflection mode was used; the power to the X-ray tube was 46 kV; the current to the X-ray tube was 40 mA; the omega-axis was oscillating in a range of 0-5 degrees at a speed of 1 degree/minute; the phi-axis was spinning at an angle of 360 degrees at a speed of 2 degrees/second; 0.3 or 0.8 mm collimator; the collection time was 60 minutes; the temperature was room temperature; and the heater was not used. The sample was presented to the X-ray source in a boron rich glass capillary.

In addition, the analysis parameters were as follows: the integration 2-theta range was 2-40 or 60 degrees; the integration chi range was 0-360 degrees; the number of chi segments was 1; the step size used was 0.02; the integration utility was cylint; normalization was used; dark counts were 8; omega offset was 180; and chi and phi offsets were 0.

The relative intensity of peaks in a diffractogram is not necessarily a limitation of the PXRD pattern because peak intensity can vary from sample to sample, e.g., due to crystalline impurities. Further, the angles of each peak can vary by about +/- 0.1 degrees, preferably +/-0.05. The entire pattern or most of the pattern peaks may also shift by about +/- 0.1 degree due to differences in calibration, settings, and other variations from instrument to instrument and from operator to operator.

## Procedure for Raman Acquisition, Filtering and Binning

### *Acquisition*

The sample was either left in the glass vial in which it was processed or an aliquot of the sample was transferred to a glass slide. The glass vial or slide was positioned in the sample chamber. The measurement was made using an Almega™ Dispersive Raman (Almega™ Dispersive Raman, Thermo-Nicolet, 5225 Verona Road, Madison, WI 53711-4495) system fitted with a 785nm laser source. The sample was manually brought into focus using the microscope portion of the apparatus with a 10x power objective (unless otherwise noted), thus directing the laser onto the surface of the sample. The spectrum was acquired using the parameters outlined in Table XXII. (Exposure times and number of exposures may vary; changes to parameters will be indicated for each acquisition.)

### *Filtering and Binning*

Each spectrum in a set was filtered using a matched filter of feature size 25 to remove background signals, including glass contributions and sample fluorescence. This is particularly important as large background signal or fluorescence limit the ability to accurately pick and assign peak positions in the subsequent steps of the binning process. Filtered spectra were binned using the peak pick and bin algorithm with the parameters given in Table XXIII. The sorted cluster diagrams for each sample set and the corresponding cluster assignments for each spectral file were used to identify groups of samples with similar spectra, which was used to identify samples for secondary analyses.

Table XXII. Raman Spectral acquisition parameters

Parameter	Setting Used
Exposure time (s)	2.0
Number of exposures	10
Laser source wavelength (nm)	785
Laser power (%)	100
Aperture shape	pin hole
Aperture size (um)	100
Spectral range	104-3428
Grating position	Single
Temperature at acquisition (degrees C)	24.0

Table XXIII. Raman Filtering and Binning Parameters

Parameter	Setting Used
<i>Filtering Parameters</i>	
Filter type	Matched
Filter size	25
<i>QC Parameters</i>	
Peak Height Threshold	1000
Region for noise test (cm <sup>-1</sup> )	0-10000
RMS noise threshold	10000
Automatically eliminate failed spectra	Yes
<i>Region of Interest</i>	
Include (cm <sup>-1</sup> )	104-3428
Exclude region I (cm <sup>-1</sup> )	
Exclude region II (cm <sup>-1</sup> )	
Exclude region III (cm <sup>-1</sup> )	
Exclude region IV (cm <sup>-1</sup> )	
<i>Peak Pick Parameters</i>	
Peak Pick Sensitivity	Variable
Peak Pick Threshold	100
<i>Peak Comparison Parameters</i>	
Peak Window (cm <sup>-1</sup> )	2
<i>Analysis Parameters</i>	
Number of clusters	Variable

#### Procedure for Single Crystal X-Ray Diffraction

Single crystal x-ray data were collected on a Bruker SMART-APEX CCD diffractometer (M. J. Zaworotko, Department of Chemistry, University of South Florida). Lattice parameters were determined from least squares analysis. Reflection data was

integrated using the program SAINT. The structure was solved by direct methods and refined by full matrix least squares using the program SHELXTL (Sheldrick, G. M. SHELXTL, Release 5.03; Siemens Analytical X-ray Instruments Inc.: Madison, WI).

The co-crystals of the present invention can be characterized, e.g., by the TGA or DSC data or by any one, any two, any three, any four, any five, any six, any seven, any eight, any nine, any ten, or any single integer number of PXRD 2-theta angle peaks or Raman shift peaks listed herein or disclosed in a figure, or by single crystal x-ray diffraction data.

#### Example 1

1:1 celecoxib:nicotinamide co-crystals were prepared. Celecoxib (100 mg, 0.26 mmol) and nicotinamide (32.0 mg, 0.26 mmol) were each dissolved in acetone (2 mL). The two solutions were mixed and the resulting mixture was allowed to evaporate slowly overnight. The precipitated solid was redissolved in acetone a second time and left to evaporate to dryness. The powder was collected and characterized. Detailed characterization of the celecoxib:nicotinamide co-crystal is listed in Table XXIV. Fig. 1A shows the PXRD diffractogram after subtraction of background noise. Fig. 1B shows the raw PXRD data. Fig. 2 shows a DSC thermogram of the celecoxib:nicotinamide co-crystal. Fig. 3 shows a TGA thermogram of the celecoxib:nicotinamide co-crystal. Fig. 4 shows a Raman spectrum of the celecoxib:nicotinamide co-crystal.

#### Example 2

Co-crystals of celecoxib and 18-crown-6 were prepared. A solution of celecoxib (157.8 mg, 0.4138 mmol) in Et<sub>2</sub>O (10.0 mL) was added to 18-crown-6 (118.1 mg, 0.447 mmol). The opaque solid dissolves immediately and a white solid subsequently began to crystallize very rapidly. The solid was collected via filtration and was washed with additional diethyl ether (5 mL). Detailed characterization of the celecoxib:18-crown-6 co-crystal is listed in Table XXIV. Fig. 5A shows the PXRD diffractogram after subtraction of background noise. Fig. 5B shows the raw PXRD data. Fig. 6 shows a



DSC thermogram of the celecoxib:18-crown-6 co-crystal. Fig. 7 shows a TGA thermogram of the celecoxib:18-crown-6 co-crystal.

### Example 3

Co-crystals of topiramate and 18-crown-6 were prepared. To topiramate (100 mg, 0.29 mmol) dissolved in diethyl ether (5 mL) was added 18-crown-6 (78 mg, 0.29 mmol) in diethyl ether (5 mL). Upon addition of 18-crown-6, the solution became cloudy and was sonicated for 30 seconds. The solution was left standing for 1 hour and a colorless precipitate was observed. The precipitate was collected, washed with diethyl ether and dried to give a 1:1 co-crystal of topiramate:18-crown-6 as a colorless solid. Detailed characterization of the co-crystal is listed in Table XXIV. Fig. 8A shows the PXRD diffractogram after subtraction of background noise. Fig. 8B shows the raw PXRD data. Fig. 9 shows a DSC thermogram of the topiramate:18-crown-6 co-crystal.

### Example 4

Co-crystals of olanzapine and nicotinamide (Forms I, II and III) were prepared. A 9-block experiment was designed with 12 solvents. (A block is a receiving plate, which can be, for example, an industry standard 24 well, 96 well, 384 well, or 1536 well format, or a custom format.) 864 crystallization experiments with 10 co-crystal formers and 3 concentrations were carried out using the CrystalMax<sup>TM</sup> platform. Form I was obtained from mixtures containing 1:1 and 1:2 molar ratios of olanzapine:nicotinamide in 1,2-dichloroethane. Form II was obtained from mixtures containing a 1:2 molar ratio of olanzapine and nicotinamide in isopropyl acetate. PXRD and DSC characterization of the olanzapine:nicotinamide co-crystals are listed in Table XXIV. Fig. 10A shows the PXRD diffractogram of form I after subtraction of background noise. Fig. 10B shows the raw PXRD data of form I. Fig. 11 shows a DSC thermogram of the olanzapine:nicotinamide form I co-crystal. Fig. 12 shows the PXRD diffractogram of olanzapine:nicotinamide form II after subtraction of background noise.

Co-crystals of olanzapine and nicotinamide (Form III) were prepared. Olanzapine (40 microliters of 25 mg/mL stock solution in tetrahydrofuran) and nicotinamide (37.6 microliters of 20 mg/mL stock solution in methanol) were added to a glass vial and dried under a flow of nitrogen. To the solid mixture was added isopropyl acetate (100 microliters) and the vial was sealed with an aluminum cap. The suspension was then heated at 70 degrees C for two hours in order to dissolve all of the solid material. The solution was then cooled to 5 degrees C and maintained at that temperature for 24 hours. After 24 hours the vial was uncapped and the mixture was concentrated to 50 microliters of total volume. The vial was then resealed with an aluminum cap and was maintained at 5 degrees C for an additional 24 hours. Large, yellow plates were observed and were collected (Form III). The solid was characterized with single crystal x-ray diffraction and powder x-ray diffraction. PXRD characterization of the co-crystal is listed in Table XXIV. Fig. 13A shows the PXRD diffractogram of form III after subtraction of background noise. Fig. 13B shows the raw PXRD data of form III. Figs. 14A-D show packing diagrams of the olanzapine:nicotinamide form III co-crystal.

Single crystal x-ray analysis reveals that the olanzapine:nicotinamide (Form III) co-crystal is made up of a ternary system containing olanzapine, nicotinamide, water and isopropyl acetate in the unit cell. The co-crystal crystallizes in the monoclinic space group  $P2_1/c$  and contains two olanzapine molecules, one nicotinamide molecule, 4 water molecules and one isopropyl acetate molecule in the asymmetric unit. The packing diagram is made up of a two-dimensional hydrogen-bonded network with the water molecules connecting the olanzapine and nicotinamide moieties. The packing diagram is also comprised of alternating olanzapine and nicotinamide layers connected through hydrogen bonding via the water and isopropyl acetate molecules, as shown in Figure 14B. The olanzapine layer propagates along the b axis at  $c/4$  and  $3c/4$ . The nicotinamide layer propagates along the b axis at  $c/2$ . The top of Figure 14C illustrates the nicotinamide superstructure. The nicotinamide molecules form dimers which hydrogen bond to chains of 4 water molecules. The water chains terminate with isopropyl acetate molecules on each side.

Crystal data:  $C_{45}H_{64}N_{10}O_7S_2$ ,  $M = 921.18$ , monoclinic  $P2_1/c$ ;  $a = 14.0961(12) \text{ \AA}$ ,  $b = 12.5984(10) \text{ \AA}$ ,  $c = 27.219(2) \text{ \AA}$ ,  $\alpha = 90^\circ$ ,  $\beta = 97.396(2)^\circ$ ,  $\gamma = 90^\circ$ ,  $T = 100(2) \text{ K}$ ,  $Z =$

4,  $D_c = 1.276 \text{ Mg/m}^3$ ,  $U = 4793.6(7) \text{ \AA}^3$ ,  $\lambda = 0.71073 \text{ \AA}$ ; 24952 reflections measured, 8457 unique ( $R_{\text{int}} = 0.0882$ ). Final residuals were  $R_1 = 0.0676$ ,  $wR_2 = 0.1461$  for  $I > 2\sigma(I)$ , and  $R_1 = 0.1187$ ,  $wR_2 = 0.1687$  for all 8457 data.

#### Example 5

A co-crystal of *cis*-itraconazole and succinic acid was prepared. To a solution of succinic acid (16.8 mg, 0.142 mmol) in tetrahydrofuran (THF) (0.50 mL) was added *cis*-itraconazole (100 mg, 0.142 mmol). A clear solution formed with heating (60 degrees C) and stirring. Upon cooling to room temperature (25 degrees C), crystals began to form. The solid was collected by filtration and washed with cold THF (2 mL). The white solid was air-dried and placed in a glass vial. The crystalline substance was found to be a succinic acid co-crystal of *cis*-itraconazole. The solid was characterized by PXRD and DSC. Fig. 15 shows the PXRD diffractogram after subtraction of background noise. Fig. 16 shows a DSC thermogram of the co-crystal.

#### Example 6

A co-crystal of *cis*-itraconazole and fumaric acid was prepared. To a blend of fumaric acid (8.40 mg, 0.072 mmol) and *cis*-itraconazole (51.8 mg, 0.073 mmol) was added tetrahydrofuran (THF) (1.0 mL). A clear solution formed with heating (60 degrees C) and stirring. Upon cooling to room temperature (25 degrees C), no crystals formed. To the clear solution was added t-butyl methyl ether (1.0 mL). A white solid formed immediately and was collected by filtration and washed with cold t-butyl methyl ether (2 mL). The white solid was air-dried and placed in a glass vial. The crystalline substance was found to be a fumaric acid co-crystal of *cis*-itraconazole. The solid was characterized by PXRD and DSC. Fig. 17 shows the PXRD diffractogram after subtraction of background noise. Fig. 18 shows a DSC thermogram of the co-crystal.

### Example 7

A co-crystal of *cis*-itraconazole and L-tartaric acid was prepared. To a solution of L-tartaric acid (21.3 mg, 0.142 mmol) in tetrahydrofuran (THF) (0.50 mL) was added *cis*-itraconazole (100 mg, 0.142 mmol). A clear solution formed with heating (60 degrees C) and stirring. Upon cooling to room temperature (25 degrees C), crystals began to form. The solid was collected by filtration and washed with cold THF (2 mL). The white solid was air-dried and placed in a glass vial. The crystalline substance was found to be an L-tartaric acid co-crystal of *cis*-itraconazole. The solid was characterized by PXRD and DSC. Fig. 19 shows the PXRD diffractogram after subtraction of background noise. Fig. 20 shows a DSC thermogram of the co-crystal.

### Example 8

A co-crystal of *cis*-itraconazole and L-malic acid was prepared. To a solution of L-malic acid (19.1 mg, 0.143 mmol) in tetrahydrofuran (THF) (0.50 mL) was added *cis*-itraconazole (100 mg, 0.142 mmol). A clear solution formed with heating (60 degrees C) and stirring. Upon cooling to room temperature (25 degrees C), crystals began to form. The solid was collected by filtration and washed with cold THF (2 mL). The white solid was air-dried and placed in a glass vial. The crystalline substance was found to be an L-malic acid co-crystal of *cis*-itraconazole. The solid was characterized by PXRD and DSC. Fig. 21 shows the PXRD diffractogram after subtraction of background noise. Fig. 22 shows a DSC thermogram of the co-crystal.

### Example 9

A co-crystal of *cis*-itraconazole hydrochloride and DL-tartaric acid was prepared. To a suspension of *cis*-itraconazole freebase (20.1 g, 0.0285 mol) in absolute ethanol (100 mL) was added a solution of hydrochloric acid (1.56 g, 0.0428 mol) and DL-tartaric acid (2.99 g, 0.0171 mol) in absolute ethanol (100 mL). A clear solution formed with stirring and heating to reflux. The hot solution was gravity filtered and allowed to cool to room temperature (25 degrees C). Upon cooling white crystals formed. The solid was

collected by filtration and washed with cold absolute ethanol (15 mL). The white solid was dried in a vacuum oven overnight at 80 degrees C. The crystalline substance was found to be a DL-tartaric acid co-crystal of *cis*-itraconazole hydrochloride. The solid was characterized by PXRD and DSC. Fig. 23 shows the PXRD diffractogram after subtraction of background noise. Fig. 24 shows a DSC thermogram of the co-crystal.

#### Example 10

Co-crystals of modafinil and malonic acid were prepared. Using a 250 mg/ml modafinil-acetic acid solution, malonic acid was dissolved on a hotplate (about 67 degrees C) at a 1:2 modafinil to malonic acid ratio. The mixture was dried under flowing nitrogen overnight. A powdery white solid was produced. After further drying for 1 day, acetic acid was removed (as determined by TGA) and the crystal structure of the modafinil:malonic acid (Form I) co-crystal, as determined by PXRD, remained the same. The modafinil:malonic acid (Form I) co-crystal was also prepared by grinding the API and co-crystal former together. 2.50 g of modafinil was mixed with 1.01 g of malonic acid in a large mortar and pestle (malonic acid added in increments over 7 days with about a 1:1.05 ratio made on the first day and increments added over the next seven days which resulted in a 1:2 modafinil:malonic acid ratio). The mixture was ground for 45 minutes initially and 20 minutes each time more malonic acid was added. On the seventh day the mixture of co-crystal and starting components was heated in a sealed 20 mL vial at 80 degrees C for about 35 minutes to facilitate completion of the co-crystal formation. PXRD analysis of the resultant material was completed and the diffractogram is shown in Fig. 25, after subtraction of background noise. Fig. 26 shows a DSC thermogram of the modafinil:malonic acid Form I co-crystal. Fig. 27 shows the Raman spectrum of the modafinil:malonic acid Form I co-crystal. Fig. 27 comprises peaks, in order of decreasing intensity, of 1004, 222, 633, 265, 1032, 1183, 814, 1601, 490, 718, 767, 361, 917, 1104, 889, 412, 1225, 1251, 1398, 1442, 1731, 1298, 3065, and 2949  $\text{cm}^{-1}$ . Single crystal data of the modafinil:malonic acid Form I co-crystal were acquired and are reported below.



Crystal data:  $C_{18}H_{19}NO_6S$ ,  $M = 377.40$ , monoclinic  $C2/c$ ;  $a = 18.728(8)$  angstroms,  $b = 5.480(2)$  angstroms,  $c = 33.894(13)$  angstroms,  $\alpha = 90$  degrees,  $\beta = 91.864(9)$  degrees,  $\gamma = 90$  degrees,  $T = 100(2)$  K,  $Z = 8$ ,  $D_c = 1.442$  Mg/m<sup>3</sup>,  $U = 3477(2)$  cubic angstroms,  $\lambda = 0.71073$  angstroms, 6475 reflections measured, 3307 unique ( $R_{int} = 0.1567$ ). Final residuals were  $R_1 = 0.1598$ ,  $wR_2 = 0.3301$  for  $I > 2\sigma(I)$ , and  $R_1 = 0.2544$ ,  $wR_2 = 0.3740$  for all 3307 data.

A polymorph of the modafinil:malonic acid Form I co-crystal was prepared in a vial. 11.4 mg of modafinil and 8.9 mg of malonic acid were dissolved in 2 mL of acetone. The solids dissolved at room temperature, and the vial was left open to evaporate the solvent in air. Large parallelogram shaped crystals formed on the walls and bottom of the vial. The PXRD diffractogram of the large crystals showed modafinil:malonic acid co-crystals Form II, a polymorphic form of modafinil:malonic acid Form I. Fig. 28 shows the PXRD diffractogram of the modafinil:malonic acid Form II co-crystal after subtraction of background noise.

#### Example 11

Co-crystals of modafinil and glycolic acid were prepared. Modafinil (1 mg, 0.0037mmol) and glycolic acid (0.30 mg, 0.0037 mmol) were dissolved in acetone (400 microliters). The solution was allowed to evaporate to dryness and the resulting solid was characterized using PXRD. PXRD data for the modafinil:glycolic acid co-crystal is listed in Table XXIV. Fig. 29A shows the PXRD diffractogram after subtraction of background noise. Fig. 29B shows the raw PXRD data.

#### Example 12

Co-crystals of modafinil and maleic acid were prepared. Using a 250 mg/ml modafinil-acetic acid solution, maleic acid was dissolved on a hotplate (about 67 degrees C) at a 2:1 modafinil to maleic ratio. The mixture was dried under flowing nitrogen overnight. A clear amorphous material remained. Solids began to grow after 2 days stored in a sealed vial at room temperature. The solid was collected and characterized as

the modafinil:maleic acid co-crystal using PXRD. Fig. 30A shows the PXRD diffractogram after subtraction of background noise. Fig. 30B shows the raw PXRD data.

### Example 13

Co-crystals of 5-fluorouracil and urea were prepared. To 5-fluorouracil (1g, 7.69 mmol) and urea (0.46g, 7.69 mmol) was added methanol (100 mL). The solution was heated at 65 degrees C and sonicated until all the material dissolved. The solution was then cooled to 5 degrees C and maintained at that temperature overnight. After about 3 days a white precipitate was observed and collected. The solid was characterized by DSC, PXRD, Raman spectroscopy, and TGA as the 5-fluorouracil:urea co-crystal. Characterization data are listed in Table XXIV. Fig. 31A shows the PXRD diffractogram after subtraction of background noise. Fig. 31B shows the raw PXRD data. Fig. 32 shows a DSC thermogram of the 5-fluorouracil:urea co-crystal. Fig. 33 shows a TGA thermogram of the 5-fluorouracil:urea co-crystal. Fig. 34 shows a Raman spectrum of the 5-fluorouracil:urea co-crystal. Single crystal data of the 5-fluorouracil:urea co-crystal were acquired and are reported below.

Crystal data:  $C_5H_7FN_4O_3$ ,  $M = 190.15$ , monoclinic  $C2/C$ ,  $a = 9.461(3)$  angstroms,  $b = 10.487(3)$  angstroms,  $c = 15.808(4)$  angstroms,  $\alpha = 90$  degrees,  $\beta = 99.891(5)$ ,  $\gamma = 90$  degrees,  $T = 100(2)$  K,  $Z = 8$ ,  $D_c = 1.635$  Mg/m<sup>3</sup>,  $U = 1545.2(7)$  cubic angstroms,  $\lambda = 0.71073$  angstroms, 3419 reflections measured, 1633 unique ( $R_{int} = 0.0330$ ). Final residuals were  $R_1 = 0.0667$ ,  $wR_2 = 0.1505$  for  $I > 2\sigma(I)$ , and  $R_1 = 0.0872$ ,  $wR_2 = 0.1598$  for all 1633 data.

### Example 14

Co-crystals of hydrochlorothiazide and nicotinic acid were prepared. Hydrochlorothiazide (12.2 mg, 0.041 mmol) and nicotinic acid (5 mg, 0.041 mmol) were dissolved in methanol (1 mL). The solution was then cooled to 5 degrees C and maintained at that temperature for 12 hours. A white solid precipitated and was collected and characterized as the hydrochlorothiazide:nicotinic acid co-crystal using PXRD. Fig.

35A shows the PXRD diffractogram after subtraction of background noise. Fig. 35B shows the raw PXRD data.

#### Example 15

Co-crystals of hydrochlorothiazide and 18-crown-6 were prepared. Hydrochlorothiazide (100 mg, 0.33 mmol) was dissolved in diethyl ether (15 mL) and was added to a solution of 18-crown-6 (87.2 mg, 0.33 mmol) in diethyl ether (15 mL). A white precipitate immediately began to form and was collected and characterized as the hydrochlorothiazide:18-crown-6 co-crystal using PXRD. Fig. 36A shows the PXRD diffractogram after subtraction of background noise. Fig. 36B shows the raw PXRD data.

#### Example 16

Co-crystals of hydrochlorothiazide and piperazine were prepared. Hydrochlorothiazide (17.3 mg, 0.058 mmol) and piperazine (5 mg, 0.058 mmol) were dissolved in a 1:1 mixture of ethyl acetate and acetonitrile (1 mL). The solution was then cooled to 5 degrees C and maintained at that temperature for 12 hours. A white solid precipitated and was collected and characterized as the hydrochlorothiazide:piperazine co-crystal using PXRD. Fig. 37A shows the PXRD diffractogram after subtraction of background noise. Fig. 37B shows the raw PXRD data.

#### Example 17

Acetaminophen:4,4'-bipyridine:water (1:1:1 stoichiometry)

50 mg (0.3307 mmol) acetaminophen and 52 mg (0.3329 mmol) 4,4'-bipyridine were dissolved in hot water and allowed to stand. Slow evaporation yielded colorless needles of a 1:1:1 acetaminophen:4,4'-bipyridine:water co-crystal, as shown in Figs. 38A-B.

Crystal data: (Bruker SMART-APEX CCD Diffractometer). triclinic, space group  $P\bar{1}$ ;  $a = 7.0534(8)$ ,  $b = 9.5955(12)$ ,  $c = 19.3649(2)$  Å,  $\alpha = 86.326(2)$ ,  $\beta = 80.291(2)$ ,

$\gamma = 88.880(2)^\circ$ ,  $U = 1308.1(3) \text{ \AA}^3$ ,  $T = 200(2) \text{ K}$ ,  $Z = 2$ ,  $\mu(\text{Mo-K}\alpha) = 0.090 \text{ mm}^{-1}$ ,  $D_c = 1.294 \text{ Mg/m}^3$ ,  $\lambda = 0.71073 \text{ \AA}$ ,  $F(000) = 537$ ,  $2\theta_{\text{max}} = 25.02^\circ$ ; 6289 reflections measured, 4481 unique ( $R_{\text{int}} = 0.0261$ ). Final residuals for 344 parameters were  $R_1 = 0.0751$ ,  $wR_2 = 0.2082$  for  $I > 2\sigma(I)$ , and  $R_1 = 0.1119$ ,  $wR_2 = 0.2377$  for all 4481 data.

**Crystal packing:** The co-crystals contain bilayered sheets in which water molecules act as a hydrogen bonded bridge between the network bipyridine moieties and the acetaminophen. Bipyridine guests are sustained by  $\pi$ - $\pi$  stacking interactions between two network bipyridines. The layers stack via  $\pi$ - $\pi$  interactions between the phenyl groups of the acetaminophen moieties.

**Differential Scanning Calorimetry:** (TA Instruments 2920 DSC),  $57.77^\circ \text{C}$  (endotherm); m.p. =  $58\text{-}60^\circ \text{C}$  (MEL-TEMP); (acetaminophen m.p. =  $169^\circ \text{C}$ , 4,4'-bipyridine m.p. =  $111\text{-}114^\circ \text{C}$ ).

### Example 18

**Phenytoin:Pyridone (1:1 stoichiometry)**

28 mg (0.1109 mmol) phenytoin and 11 mg (0.1156 mmol) 4-hydroxypyridone were dissolved in 2 mL acetone and 1 mL ethanol with heating and stirring. Slow evaporation yielded colorless needles of a 1:1 phenytoin:pyridone co-crystal, as shown in Figs. 39A-B.

**Crystal data:** (Bruker SMART-APEX CCD Diffractometer),  $\text{C}_{20}\text{H}_{17}\text{N}_3\text{O}_3$ ,  $M = 347.37$ , monoclinic  $P2_1/c$ ;  $a = 16.6583(19)$ ,  $b = 8.8478(10)$ ,  $c = 11.9546(14) \text{ \AA}$ ,  $\beta = 96.618(2)^\circ$ ,  $U = 1750.2(3) \text{ \AA}^3$ ,  $T = 200(2) \text{ K}$ ,  $Z = 4$ ,  $\mu(\text{Mo-K}\alpha) = 0.091 \text{ mm}^{-1}$ ,  $D_c = 1.318 \text{ Mg/m}^3$ ,  $\lambda = 0.71073 \text{ \AA}$ ,  $F(000) = 728$ ,  $2\theta_{\text{max}} = 56.60^\circ$ ; 10605 reflections measured, 4154 unique ( $R_{\text{int}} = 0.0313$ ). Final residuals for 247 parameters were  $R_1 = 0.0560$ ,  $wR_2 = 0.1356$  for  $I > 2\sigma(I)$ , and  $R_1 = 0.0816$ ,  $wR_2 = 0.1559$  for all 4154 data.

**Crystal packing:** The co-crystal is sustained by hydrogen bonding of adjacent phenytoin molecules between the carbonyl and the amine closest to the tetrahedral carbon, and by hydrogen bonding between pyridone carbonyl functionalities and the amine not involved in phenytoin-phenytoin interactions. The pyridone carbonyl also hydrogen bonds with adjacent pyridone molecules forming a one-dimensional network.

Infrared Spectroscopy: (Nicolet Avatar 320 FTIR), characteristic peaks for the co-crystal were identified as: 2° amine found at  $3311\text{cm}^{-1}$ , carbonyl (ketone) found at  $1711\text{cm}^{-1}$ , olephin peak found at  $1390\text{cm}^{-1}$ .

Differential Scanning Calorimetry: (TA Instruments 2920 DSC), 233.39 degrees C (endotherm) and 271.33 degrees C (endotherm); m.p. = 231-233 degrees C (MEL-TEMP); (phenytoin m.p. = 295 degrees C, pyridone m.p. = 148 degrees C).

Thermogravimetric Analysis: (TA Instruments 2950 Hi-Resolution TGA), a 29.09% weight loss starting at 192.80 degrees C, 48.72% weight loss starting at 238.27 degrees C, and 18.38% loss starting at 260.17 degrees C followed by complete decomposition.

Powder x-ray diffraction: (Rigaku Miniflex Diffractometer using Cu  $K\alpha$  ( $\lambda = 1.540562$ ), 30kV, 15mA). The powder data were collected over an angular range of  $3^\circ$  to  $40^\circ$   $2\theta$  in continuous scan mode using a step size of  $0.02^\circ$   $2\theta$  and a scan speed of  $2.0^\circ/\text{minute}$ . PXRD: Showed analogous peaks to the simulated PXRD derived from the single crystal data. experimental (calculated): 5.2 (5.3); 11.1 (11.3); 15.1 (15.2); 16.2 (16.4); 16.7 (17.0); 17.8 (17.9); 19.4 (19.4); 19.8 (19.7); 20.3 (20.1); 21.2 (21.4); 23.3 (23.7); 26.1 (26.4); 26.4 (26.6); 27.3 (27.6); 29.5 (29.9).

### Example 19

Aspirin (acetylsalicylic acid):4,4'-bipyridine (2:1 stoichiometry)

50 mg (0.2775 mmol) aspirin and 22 mg (0.1388 mmol) 4,4'-bipyridine were dissolved in 4 mL hexane. 8 mL ether was added to the solution and allowed to stand for one hour, yielding colorless needles of a 2:1 aspirin:4,4'-bipyridine co-crystal, as shown in Figs. 40A-D. Alternatively, aspirin:4,4'-bipyridine (2:1 stoichiometry) can be made by grinding the solid ingredients in a pestle and mortar.

Crystal data: (Bruker SMART-APEX CCD Diffractometer),  $\text{C}_{28}\text{H}_{24}\text{N}_2\text{O}_8$ ,  $M = 516.49$ , orthorhombic  $Pbcn$ ;  $a = 28.831(3)$ ,  $b = 11.3861(12)$ ,  $c = 8.4144(9)$  Å,  $U = 2762.2(5)$  Å<sup>3</sup>,  $T = 173(2)$  K,  $Z = 4$ ,  $\mu(\text{Mo-K}\alpha) = 0.092$  mm<sup>-1</sup>,  $D_c = 1.242$  Mg/m<sup>3</sup>,  $\lambda = 0.71073$  Å,  $F(000) = 1080$ ,  $2\theta_{\text{max}} = 25.02^\circ$ ; 12431 reflections measured, 2433 unique



( $R_{\text{int}} = 0.0419$ ). Final residuals for 202 parameters were  $R_1 = 0.0419$ ,  $wR_2 = 0.1358$  for  $I > 2\sigma(I)$ , and  $R_1 = 0.0541$ ,  $wR_2 = 0.1482$  for all 2433 data.

**Crystal packing:** The co-crystal contains the carboxylic acid-pyridine heterodimer that crystallizes in the *Pbcn* space group. The structure is an inclusion compound containing disordered solvent in the channels. In addition to the dominant hydrogen bonding interaction of the heterodimer,  $\pi$ - $\pi$  stacking of the bipyridine and phenyl groups of the aspirin and hydrophobic interactions contribute to the overall packing interactions.

**Infrared Spectroscopy:** (Nicolet Avatar 320 FTIR), characteristic (-COOH) peak at  $1679 \text{ cm}^{-1}$  was shifted up and less intense at  $1694 \text{ cm}^{-1}$ , where as the lactone peak is shifted down slightly from  $1750 \text{ cm}^{-1}$  to  $1744 \text{ cm}^{-1}$ .

**Differential Scanning Calorimetry:** (TA Instruments 2920 DSC),  $95.14$  degrees C (endotherm); m.p. =  $91$ - $96$  degrees C (MEL-TEMP); (aspirin m.p. =  $1345$  degrees C, 4,4'-bipyridine m.p. =  $111$ - $114$  degrees C).

**Thermogravimetric Analysis:** (TA Instruments 2950 Hi-Resolution TGA), weight loss of  $9\%$  starting at  $22.62$  degrees C,  $49.06\%$  weight loss starting at  $102.97$  degrees C followed by complete decomposition starting at  $209.37$  degrees C.

### Example 20

Ibuprofen:4,4'-Bipyridine (2:1 stoichiometry)

$50 \text{ mg}$  ( $0.242 \text{ mmol}$ ) racemic ibuprofen and  $18 \text{ mg}$  ( $0.0960 \text{ mmol}$ ) 4,4'-bipyridine were dissolved in  $5 \text{ mL}$  acetone. Slow evaporation of the solvent yielded colorless needles of a 2:1 ibuprofen:4,4'-bipyridine co-crystal, as shown in Figs. 41A-D.

**Crystal data:** (Bruker SMART-APEX CCD Diffractometer),  $\text{C}_{36}\text{H}_{44}\text{N}_2\text{O}_4$ ,  $M = 568.73$ , triclinic, space group *P*-1;  $a = 5.759(3)$ ,  $b = 11.683(6)$ ,  $c = 24.705(11) \text{ \AA}$ ,  $\alpha = 93.674(11)$ ,  $\beta = 90.880(10)$ ,  $\gamma = 104.045(7)^\circ$ ,  $U = 1608.3(13) \text{ \AA}^3$ ,  $T = 200(2) \text{ K}$ ,  $Z = 2$ ,  $\mu(\text{Mo-K}\alpha) = 0.076 \text{ mm}^{-1}$ ,  $D_c = 1.174 \text{ Mg/m}^3$ ,  $\lambda = 0.71073 \text{ \AA}$ ,  $F(000) = 612$ ,  $2\theta_{\text{max}} = 23.29^\circ$ ; 5208 reflections measured, 3362 unique ( $R_{\text{int}} = 0.0826$ ). Final residuals for 399 parameters were  $R_1 = 0.0964$ ,  $wR_2 = 0.2510$  for  $I > 2\sigma(I)$ , and  $R_1 = 0.1775$ ,  $wR_2 = 0.2987$  for all 3362 data.

**Crystal packing:** The co-crystal contains ibuprofen:bipyridine heterodimers, sustained by two hydrogen bonded carboxylic acidpyridine supramolecular synthons, arranged in a herringbone motif that packs in the space group *P*-1. The heterodimer is an extended version of the homodimer and packs to form a two-dimensional network sustained by  $\pi$ - $\pi$  stacking of the bipyridine and phenyl groups of the ibuprofen and hydrophobic interactions from the ibuprofen tails.

**Infrared Spectroscopy:** (Nicolet Avatar 320 FTIR). Analysis observed stretching of aromatic C-H at  $2899\text{ cm}^{-1}$ ; N-H bending and scissoring at  $1886\text{ cm}^{-1}$ ; C=O stretching at  $1679\text{ cm}^{-1}$ ; C-H out-of-plane bending for both 4,4'-bipyridine and ibuprofen at  $808\text{ cm}^{-1}$  and  $628\text{ cm}^{-1}$ .

**Differential Scanning Calorimetry:** (TA Instruments 2920 DSC),  $64.85\text{ degrees C}$  (endotherm) and  $118.79\text{ degrees C}$  (endotherm); m.p. =  $113\text{-}120\text{ degrees C}$  (MEL-TEMP); (ibuprofen m.p. =  $75\text{-}77\text{ degrees C}$ , 4,4'-bipyridine m.p. =  $111\text{-}114\text{ degrees C}$ ).

**Thermogravimetric Analysis:** (TA Instruments 2950 Hi-Resolution TGA),  $13.28\%$  weight loss between room temperature and  $100.02\text{ degrees C}$  immediately followed by complete decomposition.

**Powder x-ray diffraction:** (Rigaku Miniflex Diffractometer using Cu K $\alpha$  ( $\lambda = 1.540562$ ),  $30\text{kV}$ ,  $15\text{mA}$ ). The powder data were collected over an angular range of  $3^\circ$  to  $40^\circ 2\theta$  in continuous scan mode using a step size of  $0.02^\circ 2\theta$  and a scan speed of  $2.0^\circ/\text{minute}$ . PXRD derived from the single crystal data, experimental (calculated):  $3.4$  ( $3.6$ );  $6.9$  ( $7.2$ );  $10.4$  ( $10.8$ );  $17.3$  ( $17.5$ );  $19.1$  ( $19.7$ ).

### Example 21

Flurbiprofen:4,4'-bipyridine (2:1 stoichiometry)

$50\text{ mg}$  ( $0.2046\text{ mmol}$ ) flurbiprofen and  $15\text{ mg}$  ( $0.0960\text{ mmol}$ ) 4,4'-bipyridine were dissolved in  $3\text{ mL}$  acetone. Slow evaporation of the solvent yielded colorless needles of a 2:1 flurbiprofen:4,4'-bipyridine co-crystal, as shown in Figs. 42A-D.

**Crystal data:** (Bruker SMART-APEX CCD Diffractometer),  $\text{C}_{40}\text{H}_{34}\text{F}_2\text{N}_2\text{O}_4$ ,  $M = 644.69$ , monoclinic  $P2_1/n$ ;  $a = 5.860(4)$ ,  $b = 47.49(3)$ ,  $c = 5.928(4)\text{ \AA}$ ,  $\beta = 107.382(8)^\circ$ ,  $U = 1574.3(19)\text{ \AA}^3$ ,  $T = 200(2)\text{ K}$ ,  $Z = 2$ ,  $\mu(\text{Mo-K}\alpha) = 0.096\text{ mm}^{-1}$ ,  $D_c = 1.360$

$\text{Mg/m}^3$ ,  $\lambda = 0.71073 \text{ \AA}$ ,  $F(000) = 676$ ,  $2\theta_{\text{max}} = 21.69^\circ$ ; 4246 reflections measured, 1634 unique ( $R_{\text{int}} = 0.0677$ ). Final residuals for 226 parameters were  $R_1 = 0.0908$ ,  $wR_2 = 0.2065$  for  $I > 2\sigma(I)$ , and  $R_1 = 0.1084$ ,  $wR_2 = 0.2209$  for all 1634 data.

**Crystal packing:** The co-crystal contains flurbiprofen:bipyridine heterodimers, sustained by two hydrogen bonded carboxylic acidpyridine supramolecular synthon, arranged in a herringbone motif that packs in the space group  $P2_1/n$ . The heterodimer is an extended version of the homodimer and packs to form a two-dimensional network sustained by  $\pi$ - $\pi$  stacking and hydrophobic interactions of the bipyridine and phenyl groups of the flurbiprofen.

**Infrared Spectroscopy:** (Nicolet Avatar 320 FTIR), aromatic C-H stretching at  $3057 \text{ cm}^{-1}$  and  $2981 \text{ cm}^{-1}$ ; N-H bending and scissoring at  $1886 \text{ cm}^{-1}$ ; C=O stretching at  $1690 \text{ cm}^{-1}$ ; C=C and C=N ring stretching at  $1418 \text{ cm}^{-1}$ .

**Differential Scanning Calorimetry:** (TA Instruments 2920 DSC),  $162.47^\circ \text{C}$  (endotherm); m.p. =  $155\text{-}160^\circ \text{C}$  (MEL-TEMP); (flurbiprofen m.p. =  $110\text{-}111^\circ \text{C}$ , 4,4'-bipyridine m.p. =  $111\text{-}114^\circ \text{C}$ ).

**Thermogravimetric Analysis:** (TA Instruments 2950 Hi-Resolution TGA), 30.93% weight loss starting at  $31.13^\circ \text{C}$  and a 46.26% weight loss starting at  $168.74^\circ \text{C}$  followed by complete decomposition.

**Powder x-ray diffraction:** (Rigaku Miniflex Diffractometer using Cu K $\alpha$  ( $\lambda = 1.540562$ ), 30kV, 15mA), the powder data were collected over an angular range of  $3^\circ$  to  $40^\circ 2\theta$  in continuous scan mode using a step size of  $0.02^\circ 2\theta$  and a scan speed of  $2.0^\circ/\text{minute}$ . PXRD derived from the single crystal data: experimental (calculated):  $16.8 (16.8)$ ;  $17.1 (17.5)$ ;  $18.1 (18.4)$ ;  $19.0 (19.0)$ ;  $20.0 (20.4)$ ;  $21.3 (21.7)$ ;  $22.7 (23.0)$ ;  $25.0 (25.6)$ ;  $26.0 (26.1)$ ;  $26.0 (26.6)$ ;  $26.1 (27.5)$ ;  $28.2 (28.7)$ ;  $29.1 (29.7)$ .

## Example 22

Flurbiprofen:trans-1,2-bis (4-pyridyl) ethylene (2:1 stoichiometry)

25 mg (0.1023 mmol) flurbiprofen and 10 mg (0.0548 mmol) trans-1, 2-bis (4-pyridyl) ethylene were dissolved in 3 mL acetone. Slow evaporation of the solvent

yielded colorless needles of a 2:1 flurbiprofen:1,2-bis (4-pyridyl) ethylene co-crystal, as shown in Figs. 43A-B.

Crystal data: (Bruker SMART-APEX CCD Diffractometer),  $C_{42}H_{36}F_2N_2O_4$ ,  $M = 670.73$ , monoclinic  $P2_1/n$ ;  $a = 5.8697(9)$ ,  $b = 47.357(7)$ ,  $c = 6.3587(10)$  Å,  $\beta = 109.492(3)^\circ$ ,  $U = 1666.2(4)$  Å<sup>3</sup>,  $T = 200(2)$  K,  $Z = 2$ ,  $\mu(\text{Mo-K}\alpha) = 0.093$  mm<sup>-1</sup>,  $D_c = 1.337$  Mg/m<sup>3</sup>,  $\lambda = 0.71073$  Å,  $F(000) = 704$ ,  $2\theta_{\text{max}} = 21.69^\circ$ , 6977 reflections measured, 2383 unique ( $R_{\text{int}} = 0.0383$ ). Final residuals for 238 parameters were  $R_1 = 0.0686$ ,  $wR_2 = 0.1395$  for  $I > 2\sigma(I)$ , and  $R_1 = 0.1403$ ,  $wR_2 = 0.1709$  for all 2383 data.

Crystal packing: The co-crystal contains flurbiprofen:1,2-bis (4-pyridyl) ethylene heterodimers, sustained by two hydrogen bonded carboxylic acid-pyridine supramolecular synthons, arranged in a herringbone motif that packs in the space group  $P2_1/n$ . The heterodimer from 1,2-bis (4-pyridyl) ethylene further extends the homodimer relative to example 21 and packs to form a two-dimensional network sustained by  $\pi$ - $\pi$  stacking and hydrophobic interactions of the bipyridine and phenyl groups of the flurbiprofen.

Infrared Spectroscopy: (Nicolet Avatar 320 FTIR), aromatic C-H stretching at 2927 cm<sup>-1</sup> and 2850 cm<sup>-1</sup>; N-H bending and scissoring at 1875 cm<sup>-1</sup>; C=O stretching at 1707 cm<sup>-1</sup>; C=C and C=N ring stretching at 1483 cm<sup>-1</sup>.

Differential Scanning Calorimetry: (TA Instruments 2920 DSC), 100.01 degrees C, 125.59 degrees C and 163.54 degrees C (endotherms); m.p. = 153-158 degrees C (MEL-TEMP); (flurbiprofen m.p. = 110-111 degrees C, trans-1, 2-bis (4-pyridyl) ethylene m.p. = 150-153 degrees C).

Thermogravimetric Analysis: (TA Instruments 2950 Hi-Resolution TGA), 91.79% weight loss starting at 133.18 degrees C followed by complete decomposition.

Powder x-ray diffraction: (Rigaku Miniflex Diffractometer using Cu K $\alpha$  ( $\lambda = 1.540562$ ), 30kV, 15mA), the powder data were collected over an angular range of  $3^\circ$  to  $40^\circ 2\theta$  in continuous scan mode using a step size of  $0.02^\circ 2\theta$  and a scan speed of  $2.0^\circ/\text{minute}$ . PXRD derived from the single crystal data, experimental (calculated): 3.6 (3.7); 17.3 (17.7); 18.1 (18.6); 18.4 (18.6); 19.1 (19.3); 22.3 (22.5); 23.8 (23.9); 25.9 (26.4); 28.1 (28.5).

Example 23

Carbamazepine:*p*-Phthalaldehyde (2:1 stoichiometry)

25 mg (0.1058 mmol) carbamazepine and 7 mg (0.0521 mmol) *p*-phthalaldehyde were dissolved in approximately 3 mL methanol. Slow evaporation of the solvent yielded colorless needles of a 2:1 carbamazepine:*p*-phthalaldehyde co-crystal, as shown in Figs. 44A-B.

Crystal data: (Bruker SMART-APEX CCD Diffractometer),  $C_{38}H_{30}N_4O_4$ ,  $M = 606.66$ , monoclinic  $C2/c$ ;  $a = 29.191(16)$ ,  $b = 4.962(3)$ ,  $c = 20.316(11)$  Å,  $\beta = 92.105(8)^\circ$ ,  $U = 2941(3)$  Å<sup>3</sup>,  $T = 200(2)$  K,  $Z = 4$ ,  $\mu(\text{Mo-K}\alpha) = 0.090$  mm<sup>-1</sup>,  $D_c = 1.370$  Mg/m<sup>3</sup>,  $\lambda = 0.71073$  Å,  $F(000) = 1272$ ,  $2\theta_{\text{max}} = 43.66^\circ$ , 3831 reflections measured, 1559 unique ( $R_{\text{int}} = 0.0510$ ). Final residuals for 268 parameters were  $R_1 = 0.0332$ ,  $wR_2 = 0.0801$  for  $I > 2\sigma(I)$ , and  $R_1 = 0.0403$ ,  $wR_2 = 0.0831$  for all 1559 data.

Crystal packing: The co-crystals contain hydrogen bonded carboxamide homodimers that crystallize in the space group  $C2/c$ . The 1° amines of the homodimer are bifurcated to the carbonyl of the *p*-phthalaldehyde forming a chain with an adjacent homodimer. The chains pack in a crinkled tape motif sustained by  $\pi$ - $\pi$  interactions between phenyl rings of the carbamazepine.

Infrared Spectroscopy: (Nicolet Avatar 320 FTIR). The 1° amine unsymmetrical and symmetrical stretching was shifted down to 3418 cm<sup>-1</sup>; aliphatic aldehyde and 1° amide C=O stretching was shifted up to 1690 cm<sup>-1</sup>; N-H in-plane bending at 1669 cm<sup>-1</sup>; C-H aldehyde stretching at 2861 cm<sup>-1</sup> and H-C=O bending at 1391 cm<sup>-1</sup>.

Differential Scanning Calorimetry: (TA Instruments 2920 DSC), 128.46 degrees C (endotherm), m.p. = 121-124 degrees C (MEL-TEMP), (carbamazepine m.p. = 190.2 degrees C, *p*-phthalaldehyde m.p. = 116 degrees C).

Thermogravimetric Analysis: (TA Instruments 2950 Hi-Resolution TGA), 17.66% weight loss starting at 30.33 degrees C then a 17.57% weight loss starting at 100.14 degrees C followed by complete decomposition.

Powder x-ray diffraction: (Rigaku Miniflex Diffractometer using Cu K $\alpha$  ( $\lambda = 1.540562$ ), 30kV, 15mA). The powder data were collected over an angular range of 3° to 40° 2 $\theta$  in continuous scan mode using a step size of 0.02° 2 $\theta$  and a scan speed of



2.0°/minute. PXRD derived from the single crystal data, experimental (calculated): 8.5 (8.7); 10.6 (10.8); 11.9 (12.1); 14.4 (14.7) 15.1 (15.2); 18.0 (18.1); 18.5 (18.2); 19.8 (18.7); 23.7 (24.0); 24.2 (24.2); 26.4 (26.7); 27.6 (27.9); 27.8 (28.2); 28.7 (29.1); 29.3 (29.6); 29.4 (29.8).

#### Example 24

##### Carbamazepine:nicotinamide (1:1 stoichiometry)

25 mg (0.1058 mmol) carbamazepine and 12 mg (0.0982 mmol) nicotinamide were dissolved in 4 mL of DMSO, methanol or ethanol. Slow evaporation of the solvent yielded colorless needles of a 1:1 carbamazepine:nicotinamide co-crystal, as shown in Fig. 45.

Using a separate method, 25 mg (0.1058 mmol) carbamazepine and 12 mg (0.0982mmol) nicotinamide were ground together with mortar and pestle. The solid was determined to be 1:1 carbamazepine:nicotinamide microcrystals (PXRD).

1:1 carbamazepine:nicotinamide co-crystals were also prepared via another method. A 12-block experiment was designed with 12 solvents. (A block is a receiving plate, which can be an industry standard 96 well, 384 well, or 1536 well format, or a custom format.) 1152 crystallization experiments were carried out using the CrystalMax™ platform. The co-crystal was obtained from samples containing toluene, acetone, or isopropyl acetate. The resulting co-crystal was characterized by PXRD and DSC and these data are shown in Figs. 46 and 47, respectively. The co-crystals prepared from toluene, acetone, or isopropyl acetate may contain impurities such as carbamazepine in free form due to incomplete purification.

Crystal data: (Bruker SMART-APEX CCD Diffractometer),  $C_{21}H_{18}N_4O_2$ ,  $M = 358.39$ , monoclinic  $P2_1/n$ ;  $a = 5.0961(8)$ ,  $b = 17.595(3)$ ,  $c = 19.647(3)$  Å,  $\beta = 90.917(3)^\circ$ ,  $U = 1761.5(5)$  Å<sup>3</sup>,  $T = 200(2)$  K,  $Z = 4$ ,  $\mu(\text{Mo-K}\alpha) = 0.090$  mm<sup>-1</sup>,  $D_c = 1.351$  Mg/m<sup>3</sup>,  $\lambda = 0.71073$  Å,  $F(000) = 752$ ,  $2\theta_{\text{max}} = 56.60^\circ$ , 10919 reflections measured, 4041 unique ( $R_{\text{int}} = 0.0514$ ). Final residuals for 248 parameters were  $R_1 = 0.0732$ ,  $wR_2 = 0.1268$  for  $I > 2\sigma(I)$ , and  $R_1 = 0.1161$ ,  $wR_2 = 0.1430$  for all 4041 data.

**Crystal packing:** The co-crystals contain hydrogen bonded carboxamide homodimers. The 1° amines are bifurcated to the carbonyl of the nicotinamide on each side of the dimer. The 1° amines of each nicotinamide are hydrogen bonded to the carbonyl of the adjoining dimer. The dimers form chains with  $\pi$ - $\pi$  interactions from the phenyl groups of the carbamazepine.

**Infrared Spectroscopy:** (Nicolet Avatar 320 FTIR), unsymmetrical and symmetrical stretching shifts down to  $3443\text{ cm}^{-1}$  and  $3388\text{ cm}^{-1}$  accounting for 1° amines; 1° amide C=O stretching at  $1690\text{ cm}^{-1}$ ; N-H in-plane bending at  $1614\text{ cm}^{-1}$ ; C=C stretching shifted down to  $1579\text{ cm}^{-1}$ ; aromatic H's from  $800\text{ cm}^{-1}$  to  $500\text{ cm}^{-1}$  are present.

**Differential Scanning Calorimetry:** (TA Instruments 2920 DSC),  $74.49\text{ degrees C}$  (endotherm) and  $159.05\text{ degrees C}$  (endotherm), m.p. =  $153\text{-}158\text{ degrees C}$  (MEL-TEMP), (carbamazepine m.p. =  $190.2\text{ degrees C}$ , nicotinamide m.p. =  $150\text{-}160\text{ degrees C}$ ).

**Thermogravimetric Analysis:** (TA Instruments 2950 Hi-Resolution TGA),  $57.94\%$  weight loss starting at  $205.43\text{ degrees C}$  followed by complete decomposition.

**Powder x-ray diffraction:** (Rigaku Miniflex Diffractometer using Cu K $\alpha$  ( $\lambda = 1.540562$ ),  $30\text{kV}$ ,  $15\text{mA}$ ). The powder data were collected over an angular range of  $3^\circ$  to  $40^\circ 2\theta$  in continuous scan mode using a step size of  $0.02^\circ 2\theta$  and a scan speed of  $2.0^\circ/\text{minute}$ . PXRD: Showed analogous peaks to the simulated PXRD derived from the single crystal data. PXRD analysis experimental (calculated):  $6.5$  ( $6.7$ );  $8.8$  ( $9.0$ );  $10.1$  ( $10.3$ );  $13.2$  ( $13.5$ );  $15.6$  ( $15.8$ );  $17.7$  ( $17.9$ );  $17.8$  ( $18.1$ );  $18.3$  ( $18.6$ );  $19.8$  ( $20.1$ );  $20.4$  ( $20.7$ );  $21.6$  (N/A);  $22.6$  ( $22.8$ );  $22.9$  ( $23.2$ );  $26.4$  ( $26.7$ );  $26.7$  ( $27.0$ );  $28.0$  ( $28.4$ ).

### Example 25

Carbamazepine:saccharin (1:1 stoichiometry)

$25\text{ mg}$  ( $0.1058\text{mmol}$ ) carbamazepine and  $19\text{ mg}$  ( $0.1037\text{ mmol}$ ) saccharin were dissolved in approximately  $4\text{ mL}$  ethanol. Slow evaporation of the solvent yielded colorless needles of a 1:1 carbamazepine:saccharin co-crystal, as shown in Fig. 48. Solubility measurements indicate that this co-crystal of carbamazepine has improved

solubility over previously known forms of carbamazepine (e.g., increased molar solubility and longer solubility in aqueous solutions).

1:1 carbamazepine:saccharin co-crystals were also prepared via another method. A 12-block experiment was designed with 12 solvents. (A block is a receiving plate, which can be an industry standard 96 well, 384 well, or 1536 well format, or a custom format.) 1152 crystallization experiments were carried out using the CrystalMax™ platform. The carbamazepine:saccharin co-crystal was obtained from a mixture of isopropyl acetate and heptane. The resulting co-crystal was characterized by PXRD and DSC and these data are shown in Figures 49 and 50, respectively. The co-crystal prepared from a mixture of isopropyl acetate and heptane may contain impurities such as carbamazepine in free form due to incomplete purification.

Crystal data: (Bruker SMART-APEX CCD Diffractometer),  $C_{22}H_{17}N_3O_4S$ ,  $M = 419.45$ , triclinic  $P-1$ ;  $a = 7.5140(11)$ ,  $b = 10.4538(15)$ ,  $c = 12.6826(18)$  Å,  $\alpha = 83.642(2)^\circ$ ,  $\beta = 85.697(2)^\circ$ ,  $\gamma = 75.411(2)^\circ$ ,  $U = 957.0(2)$  Å<sup>3</sup>,  $T = 200(2)$  K,  $Z = 2$ ,  $\mu(Mo-K\alpha) = 0.206$  mm<sup>-1</sup>,  $D_c = 1.456$  Mg/m<sup>3</sup>,  $\lambda = 0.71073$  Å,  $F(000) = 436$ ,  $2\theta_{max} = 56.20^\circ$ ; 8426 reflections measured, 4372 unique ( $R_{int} = 0.0305$ ). Final residuals for 283 parameters were  $R_1 = 0.0458$ ,  $wR_2 = 0.1142$  for  $I > 2\sigma(I)$ , and  $R_1 = 0.0562$ ,  $wR_2 = 0.1204$  for all 4372 data.

Crystal packing: The co-crystals contain hydrogen bonded carboxamide homodimers. The 2° amines of the saccharin are hydrogen bonded to the carbonyl of the carbamazepine on each side forming a tetramer. The crystal has a space group of  $P-1$  with  $\pi$ - $\pi$  interactions between the phenyl groups of the carbamazepine and the saccharin phenyl groups.

Infrared Spectroscopy: (Nicolet Avatar 320 FTIR), unsymmetrical and symmetrical stretching shifts up to 3495 cm<sup>-1</sup> accounting for 1° amines; C=O aliphatic stretching was shifted up to 1726 cm<sup>-1</sup>; N-H in-plane bending at 1649 cm<sup>-1</sup>; C=C stretching shifted down to 1561 cm<sup>-1</sup>; (O=S=O) sulfonyl peak at 1330 cm<sup>-1</sup> C-N aliphatic stretching 1175 cm<sup>-1</sup>.

Differential Scanning Calorimetry: (TA Instruments 2920 DSC), 75.31 degrees C (endotherm) and 177.32 degrees C (endotherm), m.p. = 148-155 degrees C (MEL-TEMP); (carbamazepine m.p. = 190.2 degrees C, saccharin m.p. = 228.8 degrees C).

Thermogravimetric Analysis: (TA Instruments 2950 Hi-Resolution TGA), 3.342% weight loss starting at 67.03 degrees C and a 55.09% weight loss starting at 118.71 degrees C followed by complete decomposition.

Powder x-ray diffraction: (Rigaku Miniflex Diffractometer using Cu K $\alpha$  ( $\lambda = 1.540562$ ), 30kV, 15mA). The powder data were collected over an angular range of 3° to 40° 2 $\theta$  in continuous scan mode using a step size of 0.02° 2 $\theta$  and a scan speed of 2.0 °/minute. PXRD derived from the single crystal data, experimental (calculated): 6.9 (7.0); 12.2 (12.2); 13.6 (13.8); 14.0 (14.1); 14.1 (14.4); 15.3 (15.6); 15.9 (15.9); 18.1 (18.2); 18.7 (18.8); 20.2 (20.3); 21.3 (21.5); 23.7 (23.9); 26.3 (26.4); 28.3 (28.3).

#### Example 26

Carbamazepine:2,6-pyridinedicarboxylic acid (1:1 stoichiometry)

36 mg (0.1524 mmol) carbamazepine and 26 mg (0.1556 mmol) 2,6-pyridinedicarboxylic acid were dissolved in approximately 2 mL ethanol. Slow evaporation of the solvent yielded clear needles of a 1:1 carbamazepine:2,6-pyridinedicarboxylic acid co-crystal, as shown in Figs. 51A-B.

Crystal data: (Bruker SMART-APEX CCD Diffractometer). C<sub>22</sub>H<sub>17</sub>N<sub>3</sub>O<sub>5</sub>, M=403.39, orthorhombic P2(1)2(1)2(1); a=7.2122, b=14.6491, c=17.5864 Å,  $\alpha=90^\circ$ ,  $\beta=90^\circ$ ,  $\gamma=90^\circ$ , U=1858.0(2) Å<sup>3</sup>, T=100 K, Z=4,  $\mu(\text{MO-K}\alpha)=0.104 \text{ mm}^{-1}$ , D<sub>c</sub>=1.442 Mg/m<sup>3</sup>,  $\lambda=0.71073 \text{ Å}$ , F(000)840, 2 $\theta_{\text{max}}$ =28.3. 16641 reflections measured, 4466 unique (R<sub>int</sub>=0.093). Final residuals for 271 parameters were R<sub>1</sub>=0.0425 and wR<sub>2</sub>=0.0944 for I>2 $\sigma$ (I).

Crystal packing: Each hydrogen on the carbamazepine 1° amine is hydrogen bonded to a carbonyl group of a different 2,6-pyridinedicarboxylic acid moiety. The carbonyl of the carbamazepine carboxamide is hydrogen bonded to two hydroxide groups of one 2,6-pyridinedicarboxylic acid moiety.

Infrared Spectroscopy: (Nicolet Avatar 320 FTIR). 3439 cm<sup>-1</sup>, (N-H stretch, 1° amine, carbamazepine); 1734 cm<sup>-1</sup>, (C=O); 1649 cm<sup>-1</sup>, (C=C).

Melting Point: 214-216 degrees C (MEL-TEMP). (carbamazepine m.p. = 191-192 degrees C, 2,6-pyridinedicarboxylic acid m.p. = 248-250 degrees C).

Thermogravimetric Analysis: (TA Instruments 2950 Hi-Resolution TGA). 69% weight loss starting at 215 degrees C and a 17% weight loss starting at 392 degrees C followed by complete decomposition.

### Example 27

Carbamazepine:5-nitroisophthalic acid (1:1 stoichiometry)

40 mg (0.1693 mmol) carbamazepine and 30 mg (0.1421 mmol) 5-nitroisophthalic acid were dissolved in approximately 3 mL methanol or ethanol. Slow evaporation of the solvent yielded yellow needles of a 1:1 carbamazepine:5-nitroisophthalic acid co-crystal, as shown in Figs. 52A-B.

Crystal data: (Bruker SMART-APEX CCD Diffractometer). monoclinic C2/c;  $a=34.355(8)$ ,  $b=5.3795(13)$ ,  $c=23.654(6)$  Å,  $\alpha=90^\circ$ ,  $\beta=93.952(6)^\circ$ ,  $\gamma=90^\circ$ ,  $U=4361.2(18)$  Å<sup>3</sup>,  $T=200(2)$  K,  $Z=4$ ,  $\mu(\text{MO-K}\alpha)=0.110$  mm<sup>-1</sup>,  $D_c=1.439$  Mg/m<sup>3</sup>,  $\lambda=0.71073$  Å,  $F(000)1968$ ,  $2\theta_{\text{max}}=26.43^\circ$ . 11581 reflections measured, 4459 unique ( $R_{\text{int}}=0.0611$ ). Final residuals for 311 parameters were  $R_1=0.0725$ ,  $wR_2=0.1801$  for  $I>2\sigma(I)$ , and  $R_1=0.1441$ ,  $wR_2=0.1204$  for all 4459 data.

Crystal packing: The co-crystals are sustained by hydrogen bonded carboxylic acid homodimers between the two 5-nitroisophthalic acid moieties and hydrogen bonded carboxy-amide heterodimers between the carbamazepine and 5-nitroisophthalic acid moiety. There is solvent hydrogen bonded to an additional N-H donor from the carbamazepine moiety.

Infrared Spectroscopy: (Nicolet Avatar 320 FTIR). 3470 cm<sup>-1</sup>, (N-H stretch, 1° amine, carbamazepine); 3178 cm<sup>-1</sup>, (C-H stretch, alkene); 1688 cm<sup>-1</sup>, (C=O); 1602 cm<sup>-1</sup>, (C=C).

Differential Scanning Calorimetry: (TA Instruments 2920 DSC). 190.51 degrees C (endotherm). m.p. = NA (decomposes at 197-200 degrees C) (MEL-TEMP). (carbamazepine m.p. = 191-192 degrees C, 5-nitroisophthalic acid m.p. = 260-261 degrees C).

Thermogravimetric Analysis: (TA Instruments 2950 Hi-Resolution TGA). 32.02% weight loss starting at 202 degrees C, a 12.12% weight loss starting at 224



degrees C and a 17.94% weight loss starting at 285 degrees C followed by complete decomposition.

Powder x-ray diffraction: (Rigaku Miniflex Diffractometer using  $\text{CuK}\alpha$  ( $\lambda=1.540562$ ), 30kV, 15mA). The powder data were collected over an angular range of 3 to 40  $2\theta$  in continuous scan mode using a step size of 0.02  $2\theta$  and a scan speed of 2.0 /min. PXRD: Showed analogous peaks to the simulated PXRD derived from the single crystal data. PXRD analysis experimental (calculated): 10.138 (10.283), 15.291 (15.607), 17.438 (17.791), 21.166 (21.685), 31.407 (31.738), 32.650 (32.729).

### Example 28

Carbamazepine:1,3,5,7-adamantane tetracarboxylic acid (2:1 stoichiometry)

15 mg (0.1524 mmol) carbamazepine and 20 mg (0.1556 mmol) 1,3,5,7-adamantanetetracarboxylic acid were dissolved in approximately 1 mL methanol or 1 mL ethanol. Slow evaporation of the solvent yields clear plates of a 2:1 carbamazepine:1,3,5,7-adamantanetetracarboxylic acid co-crystal, as shown in Figs. 53A-B.

Crystal data: (Bruker SMART-APEX CCD Diffractometer).  $\text{C}_{44}\text{H}_{40}\text{N}_4\text{O}_{10}$ ,  $M=784.80$ , monoclinic  $C2/c$ ;  $a=18.388(4)$ ,  $b=12.682(3)$ ,  $c=16.429(3)$  Å,  $\beta=100.491(6)^\circ$ ,  $U=3767.1(14)$  Å<sup>3</sup>,  $T=100(2)$  K,  $Z=4$ ,  $\mu(\text{MO-K}\alpha)=0.099$  mm<sup>-1</sup>,  $D_c=1.384$  Mg/m<sup>3</sup>,  $\lambda=0.71073$  Å,  $F(000)1648$ ,  $2\theta_{\text{max}}=28.20^\circ$ . 16499 reflections measured, 4481 unique ( $R_{\text{int}}=0.052$ ). Final residuals for 263 parameters were  $R_1=0.0433$  and  $wR_2=0.0913$  for  $I>2\sigma(I)$ .

Crystal packing: The co-crystals form a single 3D network of four tetrahedron, linked by square planes similar to the *PtS* topology. The crystals are sustained by hydrogen bonding:

Infrared Spectroscopy: (Nicolet Avatar 320 FTIR). 3431 cm<sup>-1</sup>, (N-H stretch, 1° amine, carbamazepine); 3123 cm<sup>-1</sup>, (C-H stretch, alkene); 1723 cm<sup>-1</sup>, (C=O); 1649 cm<sup>-1</sup>, (C=C).

Melting Point: (MEL-TEMP). 258-260 degrees C (carbamazepine m.p. = 191-192 degrees C, adamantanetetracarboxylic acid m.p. = >390 degrees C).

Thermogravimetric Analysis: (TA Instruments 2950 Hi-Resolution TGA). 9% weight loss starting at 189 degrees C, a 52% weight loss starting at 251 degrees C and a 31% weight loss starting at 374 degrees C followed by complete decomposition.

### Example 29

Carbamazepine:benzoquinone (1:1 stoichiometry)

25 mg (0.1058 mmol) carbamazepine and 11 mg (0.1018 mmol) benzoquinone was dissolved in 2 mL methanol or THF. Slow evaporation of the solvent produced an average yield of yellow crystals of a 1:1 carbamazepine:benzoquinone co-crystal, as shown in Figs. 54A-B.

Crystal data: (Bruker SMART-APEX CCD Diffractometer).  $C_{21}H_{16}N_2O_3$ ,  $M=344.36$ , monoclinic  $P2(1)/c$ ;  $a=10.3335(18)$ ,  $b=27.611(5)$ ,  $c=4.9960(9)$  Å,  $\beta=102.275(3)^\circ$ ,  $U=1392.9(4)$  Å<sup>3</sup>,  $T=100(2)$  K,  $Z=3$ ,  $D_c=1.232$  Mg/m<sup>3</sup>,  $\mu(MO-K\alpha)=0.084$  mm<sup>-1</sup>,  $\lambda=0.71073$  Å,  $F(000)540$ ,  $2\theta_{max}=28.24^\circ$ . 8392 reflections measured, 3223 unique ( $R_{int}=0.1136$ ). Final residuals for 199 parameters were  $R_1=0.0545$  and  $wR_2=0.1358$  for  $I>2\sigma(I)$ , and  $R_1=0.0659$  and  $wR_2=0.1427$  for all 3223 data.

Crystal packing: The co-crystals contain hydrogen bonded carboxamide homodimers. Each 1° amine on the carbamazepine is bifurcated to a carbonyl group of a benzoquinone moiety. The dimers form infinite chains.

Infrared Spectroscopy: (Nicolet Avatar 320 FTIR).  $3420\text{ cm}^{-1}$ , (N-H stretch, 1° amine, carbamazepine);  $2750\text{ cm}^{-1}$ , (aldehyde stretch);  $1672\text{ cm}^{-1}$ , (C=O);  $1637\text{ cm}^{-1}$ , (C=C, carbamazepine).

Melting Point: 170 degrees C (MEL-TEMP). (carbamazepine m.p. = 191-192 degrees C, benzoquinone m.p. = 115.7 degrees C).

Thermogravimetric Analysis: (TA Instruments 2950 Hi-Resolution TGA). 20.62% weight loss starting at 168 degrees C and a 78% weight loss starting at 223 degrees C followed by complete decomposition.

Example 30

## Carbamazepine:trimesic acid (1:1 stoichiometry)

36 mg (0.1524 mmol) carbamazepine and 31 mg (0.1475 mmol) trimesic acid were dissolved in a solvent mixture of approximately 2 mL methanol and 2 mL dichloromethane. Slow evaporation of the solvent mixture yielded white starbursts of a 1:1 carbamazepine:trimesic acid co-crystal, as shown in Figs. 55A-B.

1:1 carbamazepine:trimesic acid co-crystals were also prepared via another method. A 9-block experiment was designed with 10 solvents. 864 crystallization experiments with 8 co-crystal formers and 3 concentrations were carried out using the CrystalMax<sup>TM</sup> platform. The co-crystal was obtained from samples containing methanol. The resulting co-crystal was characterized by PXRD and the diffractogram is shown in Fig. 56.

Crystal data: (Bruker SMART-APEX CCD Diffractometer).  $C_{24}H_{18}N_2O_7$ ,  $M=446.26$ , monoclinic  $C2/c$ ;  $a=32.5312(50)$ ,  $b=5.2697(8)$ ,  $c=24.1594(37)$  Å,  $\alpha=90^\circ$ ,  $\beta=98.191(3)^\circ$ ,  $\gamma=90^\circ$ ,  $U=4099.39(37)$  Å<sup>3</sup>,  $T=-173$  K,  $Z=8$ ,  $\mu(MO-K\alpha)=0.110$  mm<sup>-1</sup>,  $D_c=1.439$  Mg/m<sup>3</sup>,  $\lambda=0.71073$  Å,  $F(000)1968$ ,  $2\theta_{max}=26.43^\circ$ . 11581 reflections measured, 4459 unique ( $R_{int}=0.0611$ ). Final residuals for 2777 parameters were  $R_1=0.1563$ ,  $wR_2=0.1887$  for  $I>2\sigma(I)$ , and  $R_1=0.1441$ ,  $wR_2=0.1204$  for all 3601 data.

Crystal packing: The co-crystals are sustained by hydrogen bonded carboxylic acid homodimers between carbamazepine and trimesic acid moieties and hydrogen bonded carboxylic acid-amine heterodimers between two trimesic acid moieties arranged in a stacked ladder formation.

Infrared Spectroscopy: (Nicolet Avatar 320 FTIR).  $3486$  cm<sup>-1</sup> (N-H stretch, 1° amine, carbamazepine);  $1688$  cm<sup>-1</sup> (C=O, 1° amide stretch, carbamazepine);  $1602$  cm<sup>-1</sup> (C=C, carbamazepine).

Differential Scanning Calorimetry: (TA Instruments 2920 DSC). 273 degrees C (endotherm). m.p. = NA, decomposes at 278 degrees C (MEL-TEMP). (carbamazepine m.p. = 191-192 degrees C, trimesic acid m.p. = 380 degrees C)

Thermogravimetric Analysis: (TA Instruments 2950 Hi-Resolution TGA). 62.83% weight loss starting at 253 degrees C and a 30.20% weight loss starting at 278 degrees C followed by complete decomposition.

Powder x-ray diffraction: (Rigaku Miniflex Diffractometer using CuK $\alpha$  ( $\lambda=1.540562$ ), 30kV, 15mA). The powder data were collected over an angular range of 3 to 40 degrees 2-theta in continuous scan mode using a step size of 0.02 degrees 2-theta and a scan speed of 2.0/min. PXRD analysis experimental: 10.736, 12.087, 16.857, 24.857, 27.857.

**Table XXIV. Detailed Characterization of Co-Crystals**

All PXRD peaks are in units of degrees 2-theta  
All Raman shifts are in units of cm<sup>-1</sup>

Celecoxib:Nicotinamide (Example 1)

PXRD: 3.77, 7.56, 9.63, 14.76, 15.21, 16.01, 17.78, 18.68, 19.31, 20.44, 21.19, 22.10

DSC: Two endothermic transitions at about 117 and 119 degrees C and a sharp endotherm at about 130 degrees C

TGA: Decomposition beginning at about 150 degrees C

Raman: 1618, 1599, 1452, 1370, 1163, 1044, 973, 796, 632, 393, 206

Celecoxib:18-Crown-6 (Example 2)

PXRD: 8.73, 11.89, 12.57, 13.13, 15.01, 16.37, 17.03, 17.75, 18.45, 20.75, 22.37, 23.11, 24.33, 24.97, 26.61, 28.15

DSC: Sharp endotherm at about 190 degrees C

TGA: Decomposition above 200 degrees C with a 25% weight loss between about 190-210 degrees C

Topiramate:18-Crown-6 (Example 3)

PXRD: 10.79, 11.07, 12.17, 13.83, 16.13, 18.03, 18.51, 18.79, 19.21, 21.43, 22.25, 24.11

DSC: Sharp endotherm at about 135 degrees C

TGA: Rapid decomposition beginning at about 135 degrees C and leveling off slightly after 200 degrees C

Raman: 2995, 2943, 1472, 1427, 1262, 849, 805, 745, 629, 280, 226

Olanzapine:Nicotinamide (Example 4)

PXRD (Form I): 4.89, 8.65, 12.51, 14.19, 15.59, 17.15, 19.71, 21.05, 23.95, 24.59, 25.53, 26.71

PXRD (Form II): 5.13, 8.65, 11.87, 14.53, 17.53, 18.09, 19.69, 24.19, 26.01 (data as received)

PXRD (Form III): 6.41, 12.85, 14.91, 18.67, 21.85, 24.37

DSC (Form I): Slightly broad endotherm at about 126 degrees C

*cis*-Itraconazole:Succinic Acid (Example 5)

PXRD: 3.01, 6.01, 8.13, 9.05, 15.87, 16.17, 17.29, 24.47

DSC: Single endothermic transition at about 160 degrees C  $\pm$  1.0 degrees C

TGA: Less than 0.1 % volatile components by weight

<i>cis</i> -Itraconazole:Fumaric Acid (Example 6) PXRD: 4.61, 5.89, 9.23, 10.57, 15.51, 16.23, 16.93, 19.05, 20.79 DSC: The material had a weak endothermic transition at about 142 degrees C and a strong endothermic transition at about 180 degrees C TGA: The sample loses 0.5 % of its weight on the TGA between room temperature and 100 degrees C
<i>cis</i> -Itraconazole:L-Tartaric Acid (Example 7) PXRD: 4.13, 6.19, 8.49, 16.13, 17.23, 18.07, 19.13, 20.79, 22.85, 26.17 DSC: An endothermic transition at about 181 degrees C TGA: Less than 0.1 % volatile components by weight by TGA
<i>cis</i> -Itraconazole:L-Malic acid (Example 8) PXRD: 4.43, 6.07, 8.85, 15.93, 17.05, 20.49, 21.27, 22.85, 23.17, 26.17 DSC: The sample has a strong endothermic transition at about 154 degrees C TGA: The sample contained less than 0.1% volatile components by weight
<i>cis</i> -ItraconazoleHCl:DL-Tartaric acid (Example 9) PXRD: 3.73, 10.95, 13.83, 16.53, 17.75, 19.65, 21.11, 23.95 DSC: The sample has a peak endothermic transition at about 162 degrees C TGA: The sample contained less than 0.1 % volatile components by weight
Modafinil:Malonic acid (Example 10) PXRD (Form I): 5.11, 9.35, 16.87, 18.33, 19.53, 21.38, 22.05, 22.89, 24.73, 25.19, 25.81, 28.59 PXRD (Form II): 5.90, 9.54, 15.79, 18.02, 20.01, 21.66, 22.47, 25.30 DSC (Form I): Endothermic transition at about 106 degrees C Raman (Form I): 1601, 1183, 1032, 1004, 814, 633, 265, 222
Modafinil:Glycolic acid (Example 11) PXRD: 6.09, 9.51, 14.91, 15.97, 19.01, 20.03, 21.59, 22.43, 22.75, 23.75, 25.03, 25.71
Modafinil:Maleic acid (Example 12) PXRD: 4.69, 6.15, 9.61, 10.23, 15.65, 16.53, 17.19, 18.01, 19.27, 19.53, 19.97, 21.83, 22.45, 25.65
5-fluorouracil:Urea (Example 13) PXRD: 11.23, 12.69, 13.27, 15.93, 16.93, 20.37, 23.65, 25.55, 26.87, 32.49 DSC: Sharp endotherm at about 208 degrees C TGA: Approximately 32 percent weight loss between 150 and 220 degrees C Raman: 1347, 1024, 757, 644, 545
Hydrochlorothiazide:Nicotinic acid (Example 14) PXRD: 8.57, 13.23, 14.31, 16.27, 17.89, 18.75, 21.13, 21.45, 24.41, 25.73, 26.57, 27.43
Hydrochlorothiazide:18-crown-6 (Example 15) PXRD: 9.97, 10.43, 11.57, 11.81, 12.83, 14.53, 15.67, 16.61, 19.05, 20.31, 20.65, 21.09, 21.85, 22.45, 23.63, 24.21, 25.33, 26.73
Hydrochlorothiazide:Piperazine (Example 16) PXRD: 6.85, 13.75, 15.93, 18.71, 20.67, 20.93, 23.27, 24.17, 28.33, 28.87, 30.89
Acetaminophen:4,4'-Bipyridine:water (Example 17) DSC: Endothermic transition at about 58 degrees C



<p>Phenytoin:Pyridone (Example 18)</p> <p>PXRD: 5.2, 11.1, 15.1, 16.2, 16.7, 17.8, 19.4, 19.8, 20.3, 21.2, 23.3, 26.1, 26.4, 27.3, 29.5</p> <p>DSC: Endothermic transitions at about 233 and 271 degrees C</p> <p>TGA: 29.09 percent weight loss starting at about 193 degrees C, 48.72 percent weight loss starting at about 238 degrees C, 18.38 percent weight loss starting at about 260 degrees C</p>
<p>Aspirin:4,4'-Bipyridine (Example 19)</p> <p>DSC: Endothermic transition at about 95 degrees C</p> <p>TGA: 9 percent weight loss starting at about 23 degrees C, 49.06 percent weight loss starting at about 103 degrees C, decomposition starting at about 209 degrees C</p>
<p>Ibuprofen:4,4'-Bipyridine (Example 20)</p> <p>PXRD: 3.4, 6.9, 10.4, 17.3, 19.1</p> <p>DSC: Endothermic transitions at about 65 and 119 degrees C</p> <p>TGA: 13.28 percent weight loss between room temperature and about 100 degrees C</p>
<p>Flurbiprofen:4,4'-Bipyridine (Example 21)</p> <p>PXRD: 16.8, 17.1, 18.1, 19.0, 20.0, 21.3, 22.7, 25.0, 26.0, 26.1, 28.2, 29.1</p> <p>DSC: Endothermic transition at about 162 degrees C</p> <p>TGA: 30.93 percent weight loss starting at about 31 degrees C, 46.26 percent weight loss starting at about 169 degrees C</p>
<p>Flurbiprofen:trans-1,2-bis (4-pyridyl) ethylene (Example 22)</p> <p>PXRD: 3.6, 17.3, 18.1, 18.4, 19.1, 22.3, 23.8, 25.9, 28.1</p> <p>DSC: Endothermic transitions at about 100, 126, and 164 degrees C</p> <p>TGA: 91.79 percent weight loss starting at about 133 degrees C</p>
<p>Carbamazepine:p-phthalaldehyde (Example 23)</p> <p>PXRD: 8.5, 10.6, 11.9, 14.4, 15.1, 18.0, 18.5, 19.8, 23.7, 24.2, 26.4, 27.6, 27.8, 28.7, 29.3, 29.4</p> <p>DSC: Endothermic transition at about 128 degrees C</p> <p>TGA: 17.66 percent weight loss starting at about 30 degrees C, 17.57 percent weight loss starting at about 100 degrees C</p>
<p>Carbamazepine:Nicotinamide (Example 24)</p> <p>PXRD: 6.5, 8.8, 10.1, 13.2, 15.6, 17.7, 17.8, 18.3, 19.8, 20.4, 21.6, 22.6, 22.9, 26.4, 26.7, 28.0</p> <p>DSC: Sharp endotherm at about 157 degrees C</p> <p>TGA: Decomposition beginning at about 150 degrees C</p>
<p>Carbamazepine:Saccharin (Example 25)</p> <p>PXRD: 6.9, 12.2, 13.6, 14.0, 14.1, 15.3, 15.9, 18.1, 18.7, 20.2, 21.3, 23.7, 26.3, 28.3</p> <p>DSC: Endotherms were present at about 75 and 177 degrees C</p> <p>TGA: 3.342 percent weight loss starting at about 67 degrees C, 55.09 percent weight loss starting at about 119 degrees C</p>
<p>Carbamazepine:2,6-pyridinecarboxylic acid (Example 26)</p> <p>TGA: 69 percent weight loss starting at about 215 degrees C, 17 percent weight loss starting at about 392 degrees C</p>

**Carbamazepine:5-nitroisophthalic acid (Example 27)**

PXRD: 10.14, 15.29, 17.44, 21.17, 31.41, 32.65

DSC: Endotherm at about 191 degrees C

TGA: 32.02 percent weight loss starting at about 202 degrees C, 12.12 percent weight loss starting at about 224 degrees C, 17.94 percent weight loss starting at about 285 degrees C

**Carbamazepine:1,3,5,7-adamantane tetracarboxylic acid (Example 28)**

TGA: 9 percent weight loss starting at about 189 degrees C, 52 percent weight loss starting at about 251 degrees C, 31 percent weight loss starting at about 374 degrees C

**Carbamazepine:Benzoquinone (Example 29)**

TGA: 20.62 percent weight loss starting at about 168 degrees C, 78 percent weight loss starting at about 223 degrees C

**Carbamazepine:Trimesic acid (Example 30)**

PXRD: 10.89, 12.23, 14.83, 16.25, 17.05, 18.13, 18.47, 21.47, 21.95, 24.57, 25.11, 27.99

DSC: Endothermic transition at about 273 degrees C

TGA: 62.83 percent weight loss starting at about 253 degrees C, 30.20 percent weight loss starting at about 278 degrees C

**Example 31**

A co-crystal with a modulated dissolution profile has been prepared. Celecoxib: nicotinamide co-crystals were prepared via methods shown in Example 1. (See Fig. 57)

**Example 32**

A co-crystal with a modulated dissolution profile has been prepared. *cis*-Itraconazole: succinic acid, *cis*-itraconazole:L-tartaric acid and *cis*-itraconazole:L-malic acid co-crystals were prepared via methods shown in Examples 5, 7 and 8. (See Fig. 58)

**Example 33**

A co-crystal of an unsaltable or difficult to salt API has been prepared. Celecoxib: nicotinamide co-crystals were prepared via methods shown in Example 1.

#### Example 34

A co-crystal with an improved hygroscopicity profile has been prepared. Celecoxib: nicotinamide co-crystals were prepared via methods shown in Example 1. (See Fig. 59)

#### Example 35

A co-crystal with reduced form diversity as compared to the API has been prepared. Co-crystals of carbamazepine and saccharin have been prepared via method shown in Example 25.

#### Example 36

The formulation of a modafinil:malonic acid form I co-crystal was completed using lactose. Two mixtures, one of modafinil and lactose, and the second of modafinil:malonic acid co-crystal and lactose, were ground together in a mortar and pestle. The mixtures targeted a 1:1 weight ratio of modafinil to lactose. In the modafinil and lactose mixture, 901.2 mg of modafinil and 901.6 mg of lactose were ground together. In the modafinil:malonic acid co-crystal and lactose mixture, 1221.6 mg of co-crystal and 871.4 mg of lactose were ground together. The resulting powders were analyzed by PXRD and DSC. The PXRD patterns and DSC thermograms of the mixtures showed virtually no change upon comparison with both individual components. The DSC of the co-crystal mixture showed only the co-crystal melting peak at 113.6 degrees C with a heat of fusion of 75.9 J/g. This heat of fusion is 59.5 % of that found for the co-crystal alone (127.5 J/g). This result is consistent with a 58.4 % weight ratio of co-crystal in the mixture. The DSC of the modafinil and lactose mixture had a melting point of 165.7 degrees C. This is slightly lower than the measured melting point of modafinil (168.7 degrees C). The heat of fusion of the mixture (59.3 J/g) is 46.9 % that of the modafinil alone (126.6 J/g), which is consistent with the estimated value of 50 %.

The *in vitro* dissolution of both the modafinil:malonic acid form I co-crystal and pure modafinil were tested in capsules. Both gelatin and hydroxypropylmethyl cellulose

(HPMC) capsules were used in the dissolution study. The capsules were formulated with and without lactose. All formulations were ground in a mortar and pestle prior to transfer into a capsule. The dissolution of the capsules was tested in 0.01 M HCl (See Figure 61).

*In 0.01M HCl, using sieved and ground materials in gelatin capsules:*

Modafinil and the modafinil:malonic acid form I co-crystal were passed through a 38 micrometer sieve. Gelatin capsules (Size 0, B&B Pharmaceuticals, Lot # 15-01202) were filled with 200.0 mg sieved modafinil, 280.4 mg sieved modafinil:malonic acid co-crystal, 200.2 mg ground modafinil, or 280.3 mg ground modafinil:malonic acid co-crystal. Dissolution studies were performed in a Vankel VK 7000 Benchsaver Dissolution Testing Apparatus with the VK750D heater/circulator set at 37 degrees C. At 0 minutes, the capsules were dropped into vessels containing 900 mL 0.01 M HCl and stirred by paddles.

Absorbance readings were taken using a Cary 50 Spectrophotometer (wavelength set at 260nm) at the following time points: 0, 5, 10, 15, 20, 25, 30, 40, 50, and 60 minutes. The absorbance values were compared to those of standards and the modafinil concentrations of the solutions were calculated.

*In 0.01M HCl, using ground materials in gelatin or HPMC capsules, with and without lactose:*

Modafinil and the modafinil:malonic acid form I co-crystal were mixed with equivalent amounts of lactose (Spectrum, Lot QV0460) for approximately 5 minutes. Gelatin capsules (Size 0, B&B Pharmaceuticals, Lot # 15-01202) were filled with 400.2 mg modafinil and lactose (approximately 200 mg modafinil), or 561.0 mg modafinil:malonic acid form I co-crystal and lactose (approximately 200 mg modafinil). HPMC capsules (Size 0, Shionogi, Lot # A312A6) were filled with 399.9 mg modafinil and lactose, 560.9 mg modafinil:malonic acid co-crystal and lactose, 199.9 mg modafinil, or 280.5 mg modafinil:malonic acid form I co-crystal. The dissolution study was carried out as described above.

**Example 37**

The modafinil:malonic acid form I co-crystal (from Example 10) was administered to dogs in a pharmacokinetic study. Particles of modafinil:malonic acid co-crystal with a median particle size of about 16 micrometers were administered in the study. As a reference, micronized modafinil with a median particle size of about 2 micrometers was also administered in the study. The AUC of the modafinil:malonic acid co-crystal was determined to be 40 to 60 percent higher than that of the pure modafinil. Such a higher bioavailability illustrates the modulation of an important pharmacokinetic parameter due to an embodiment of the present invention. A compilation of important pharmacokinetic parameters measured during the animal study are included in Table XXV.

Table XXV- Pharmacokinetic parameters of modafinil:malonic acid co-crystal and pure modafinil in dogs

Parameter	Pure Modafinil	Modafinil:malonic acid co-crystal
Median particle size	2 micrometers	16 micrometers
C <sub>max</sub> (ng/mL)	11.0 ± 5.9	10.3 ± 3.4
T <sub>max</sub> (hours)	1.3 ± 0.6	1.7 ± 0.6
AUC (relative)	1.0	1.4-1.6
Half-life (hours)	2.1 ± 0.7	5.1 ± 2.4

The increased half-life and bioavailability of modafinil in the malonic acid form I co-crystal may be due to the presence of malonic acid. It is believed that the malonic acid may be inhibiting one or more pathways responsible for the metabolism or elimination of modafinil. It is noted that modafinil and malonic acid share a similar structure: each including two carbonyl or sulfonyl groups separated by a -CH<sub>2</sub>- and each molecule is terminated with a group that is capable of participation in a hydrogen bond with an enzyme. Such a mechanism may take place with other APIs or co-crystal formers of similar structure.

**Example 38**

The stability of the modafinil:malonic acid form I co-crystal was measured at various temperatures and relative humidities over a four week period. No degradation was found to occur at 20 or 40 degrees C. At 60 degrees C, about 0.14 percent degradation per day was determined based on a simple exponential model. At 80 degrees C, about 8 percent degradation per day was determined.



TABLE I

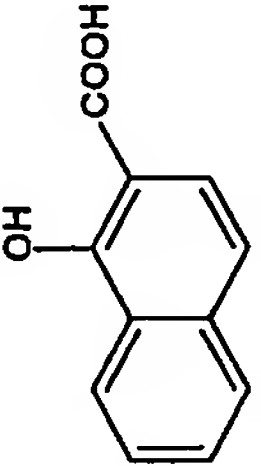
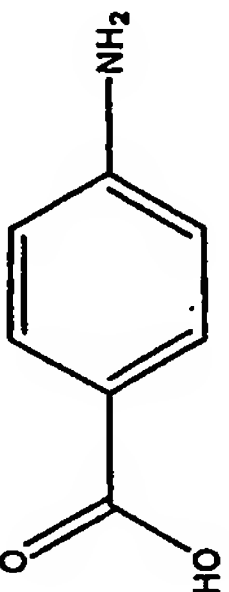
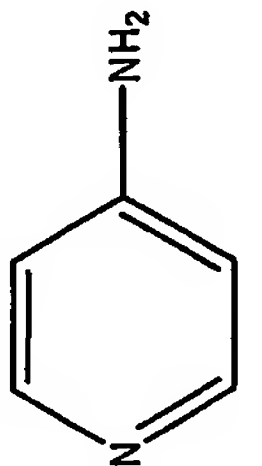
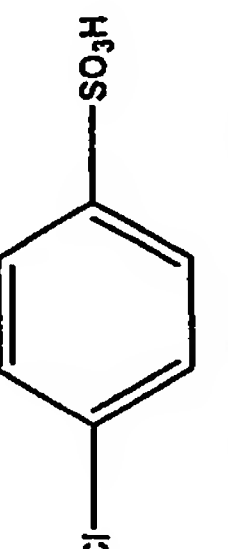
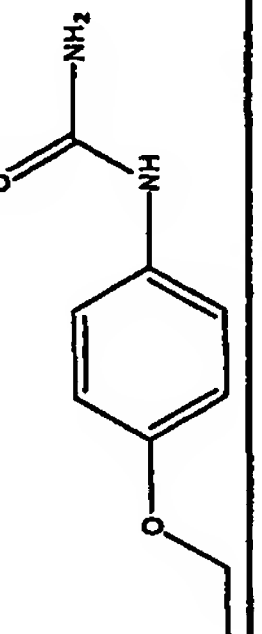
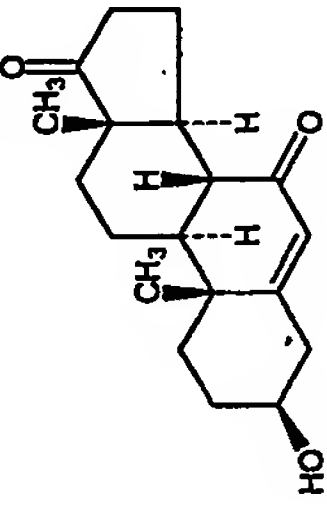
Co-Crystal Former	MW (g/mol)	MP (°C)	Class	Functionality	# acceptors	# donors	Molecular Structure	pKa Values
1-Hydroxy-2-naphthoic acid	188.18	191-192	2	Carboxylic acid, alcohol	1	2		2.7, 13.5
4-aminobenzoic acid	137.14	187-188	2	Amine, carboxylic acid	1	3		4.7, 4.8
4-aminopyridine	94.11	158-159	3	Amine, pyridine	1	2		10
4-Chlorobenzene- sulfonic acid	192.63	67	1	SO <sub>3</sub> H	3	1		0-1
4-ethoxyphenyl urea	180.2	173-174	3	Amide, NH	2	3		~7-9
7-oxo-DHEA	303	190-192	1	Alcohol, Ketone	3	1		

TABLE I

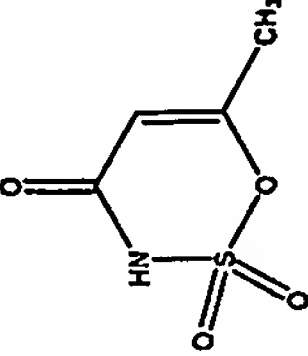
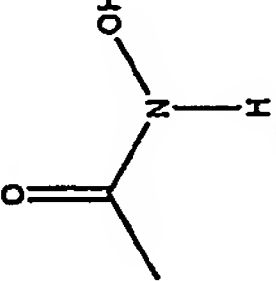
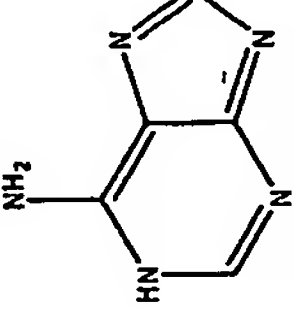
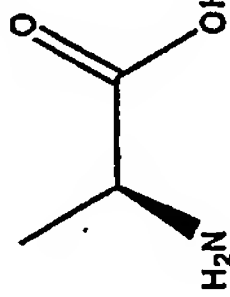
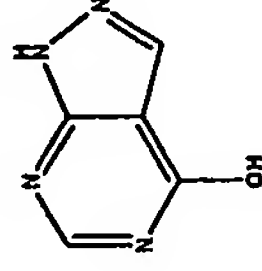
Co-Crystal Former	MW (g/mol)	MP (°C)	Class	Functionality	# acceptors	# donors	Molecular Structure	pKa Values
Acesulfame	163.15	123-124	3	SO <sub>2</sub> , Amide	4	1		~5-7
Acetohydroxamic acid	75.07	89-92	3	Amide, NH, OH	2	2		8.7
Adenine	135.13	220 (sub.)	1	Amine, NH	3	3		3.8
Adipic Acid	146.14	152	1	Carboxylic acid	2	2	HOOC(CH <sub>2</sub> ) <sub>4</sub> COOH	4.44, 5.44
Alanine	89.09	289-291	1	Amine, carboxylic acid	1	3		2.35, 9.87
Allopurinol	136.11	> 350	3	OH, NH	4	2		10.2

TABLE I

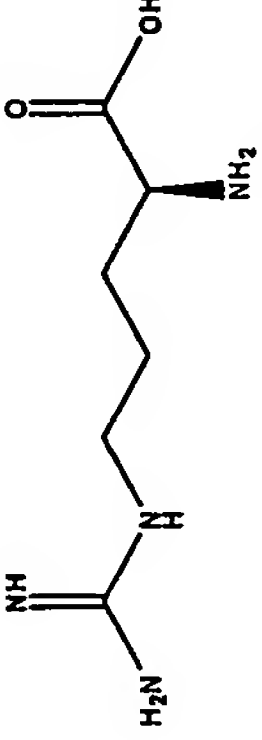
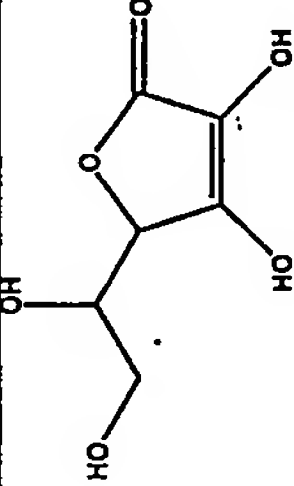
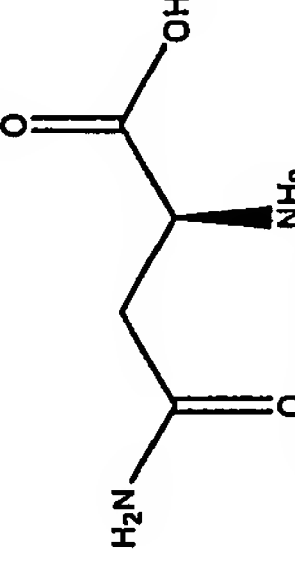
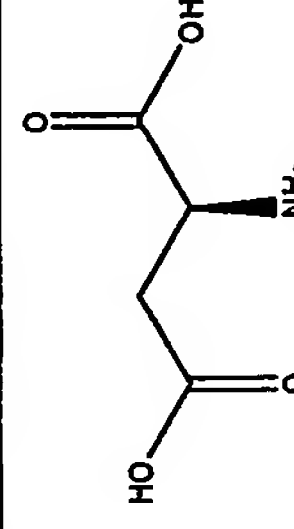
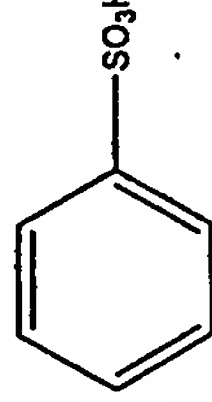
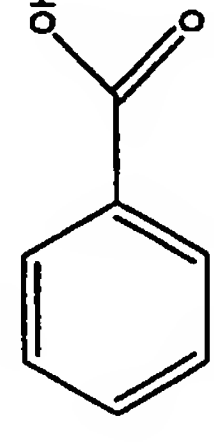
Co-Crystal Former	MW (g/mol)	MP (°C)	Class	Functionality	# acceptors	# donors	Molecular Structure	pKa Values
Arginine	174.2	244 (dec.)	1	Amine, COOH	2	7		2.18, 9.09, 13.2
Ascorbic acid	176.12	190-192	1	C=O, OH	6	4		4.17, 11.57
Asparagine	132.12	234-235	1	Amine, amide, COOH	3	5		2.02, 8.5
Aspartic acid	133.1	270-271	1	Amine, COOH	2	4		1.88, 3.65, 9.60
Benzenesulfonic Acid	158.18	43-44	1	SO <sub>3</sub> H	2	1		0.70, 1.58
Benzoic acid*	122.12	122-123	2	COOH	1	1		4.19

TABLE I

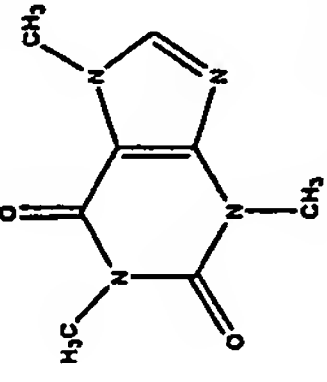
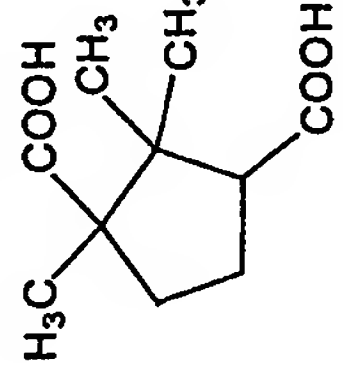
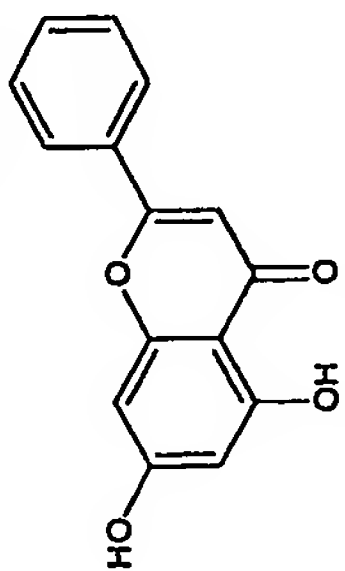
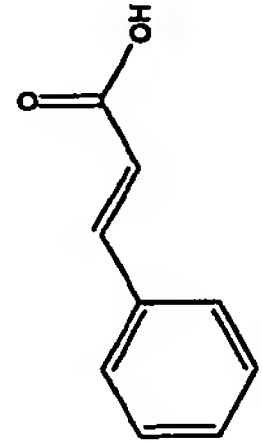
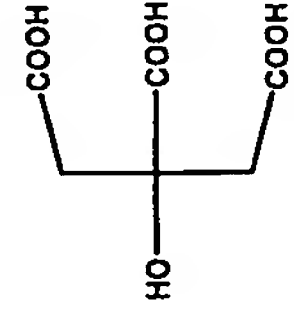
Co-Crystal Former	MW (g/mol)	MP (°C)	Class	Functionality	# acceptors	# donors	Molecular Structure	pKa Values
Caffeine	194.19	238	3	C=O	3	0		
Camphoric acid	200.23	186-189	2	Carboxylic acid	2	2		4.72, 5.83
Capric acid	172.27	31.4	1	Carboxylic acid	1	1	CH <sub>3</sub> (CH <sub>2</sub> ) <sub>8</sub> COOH	4.9
Chrysin	254.24	285	1	Phenol, ether, ketone	2	2		
Cinnamic acid	144.2	133	3	Carboxylic acid	1	1		4.4
Citric Acid	192.12	153	1	OH, COOH	4	4		3.13, 4.76, 6.40

TABLE I

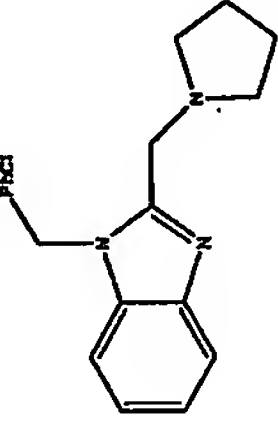
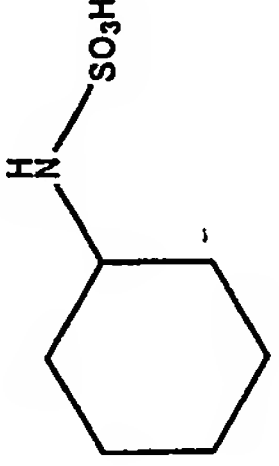
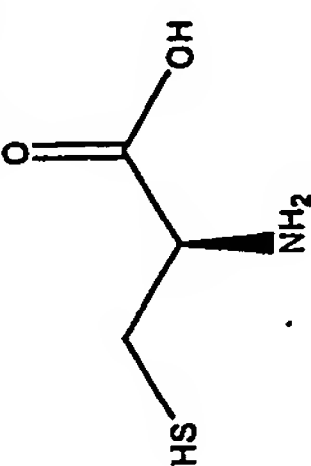
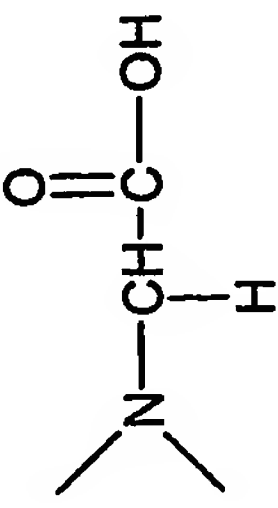
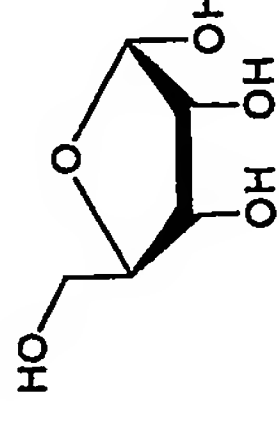
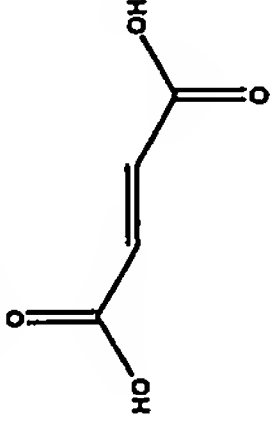
Co-Crystal Former	MW (g/mol)	MP (°C)	Class	Functionality	# acceptors	# donors	Molecular Structure	pKa Values
Clemizole	325.84	167	1	Pyrrolidine	3	0		
Cyclamic acid	179.24	169-170	3	NH, SO <sub>3</sub> H	2	2		-2
Cysteine	121.15	---	1	Amine, COOH, SH	2	4		1.71, 8.33, 10.78
Dimethylglycine	103.1	178-192	1	Amine, Carboxylic acid	2	1		2.5
D-Ribose	150.13	87	1	Alcohol, ether	1	4		
Fumaric acid	116.07	287	1	COOH	2	2		3.03, 4.38



TABLE I

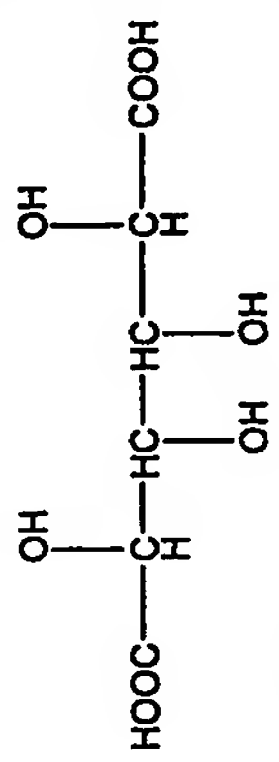
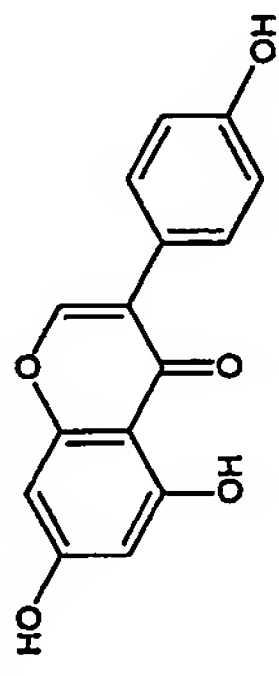
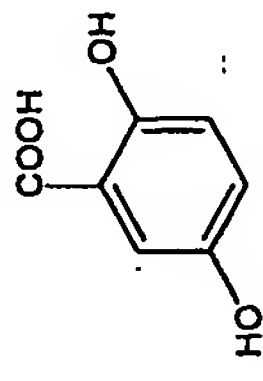
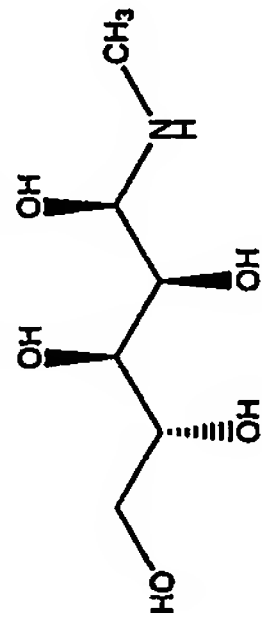
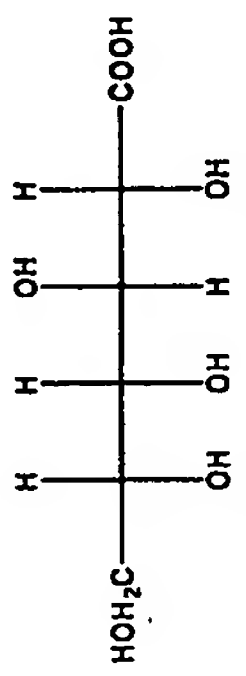
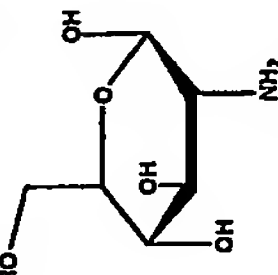
Co-Crystal Former	MW (g/mol)	MP (°C)	Class	Functionality	# acceptors	# donors	Molecular Structure	pKa Values
Galactaric acid	210.14	255 (dec)	1	Carboxylic acid, alcohol	2	6		3.08, 3.63
Genistein	270.24	297-298	1	Alcohol, Phenol, ether, ketone	2	3		
Gentisic acid	154.12	199-200 form I, 205 form II	2	Carboxylic acid, alcohol, phenol	1	3		2.93
Glucamine, N-Methyl	195.22	128-129	1	Alcohol, Amine	5	6		8.03(B)
Gluconic acid	196.15	131	1	OH, COOH	6	6		3.76
Glucosamine	179.17	88	1	OH	5	6		6.91

TABLE I

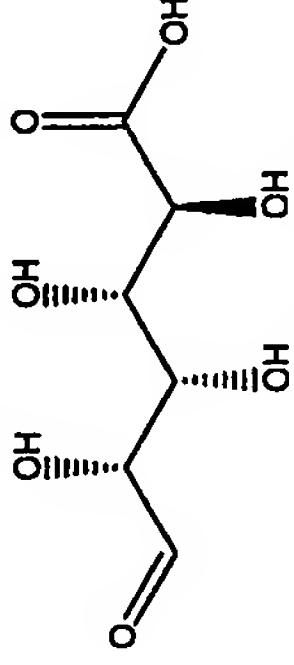
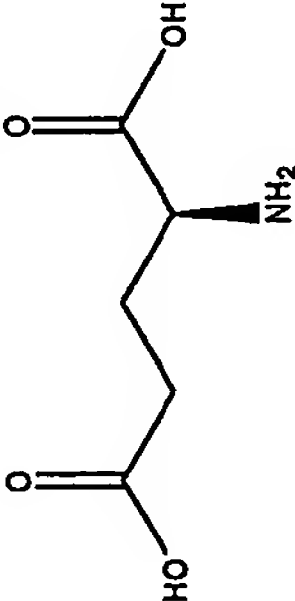
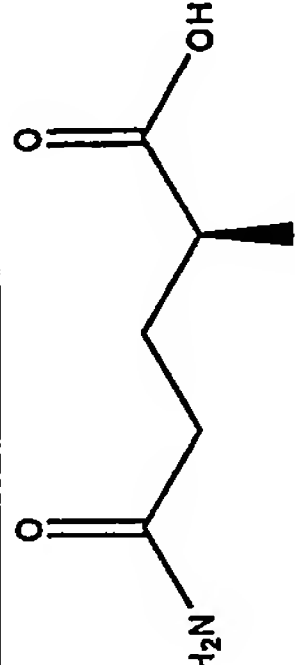
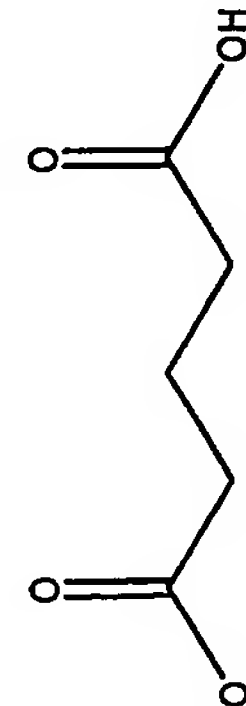
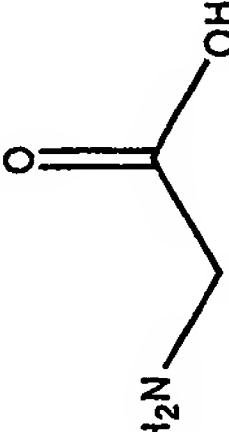
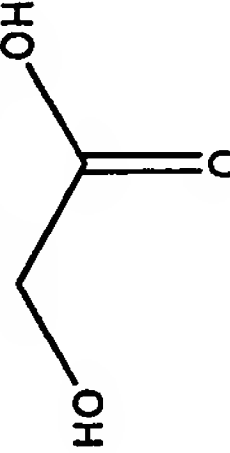
Co-Crystal Former	MW (g/mol)	MP (°C)	Class	Functionality	# acceptors	# donors	Molecular Structure	pKa Values
Glucuronic acid	194.14	165	1	Carboxylic acid, alcohol, aldehyde	2	5		3.18
Glutamic acid	147.13	160	1	Amine, COOH	2	4		2.19, 4.25, 9.67
Glutamine	146.15	185-186	1	Amine, Amide, COOH	2	5		2.17, 9.13
Glutaric acid	132.11	98-98	1	COOH	2	2		2.7, 4.5
Glycine	75.07	182	1	Amine, COOH	2	3		2.34, 9.6
Glycolic acid	76.05	80	1	OH, COOH	2	2		3.82

TABLE I

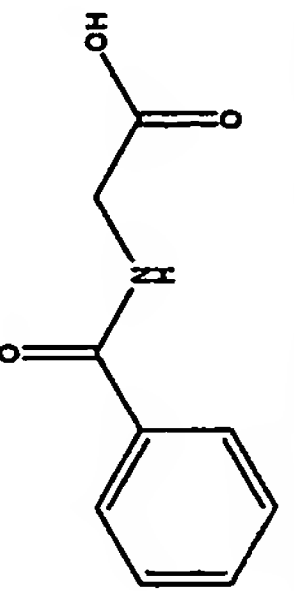
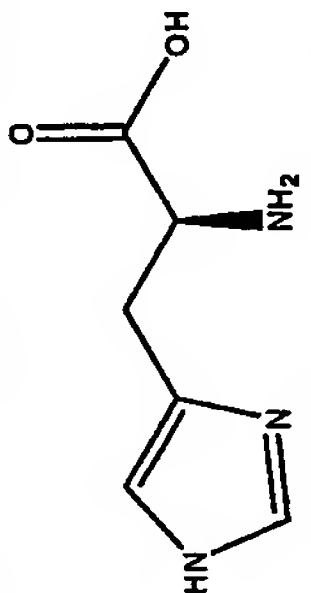
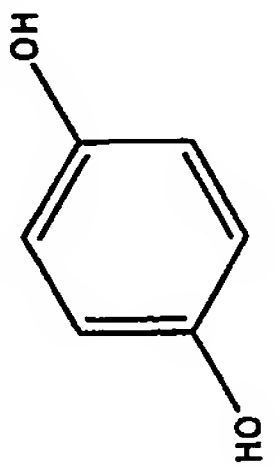
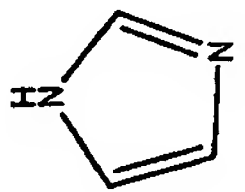
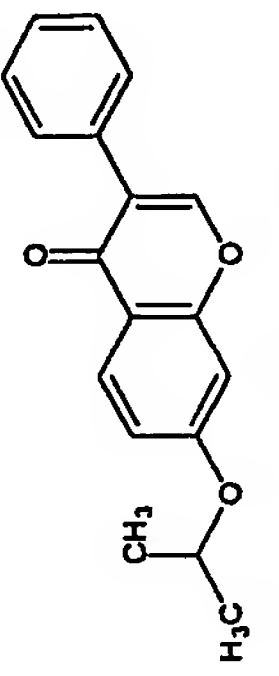
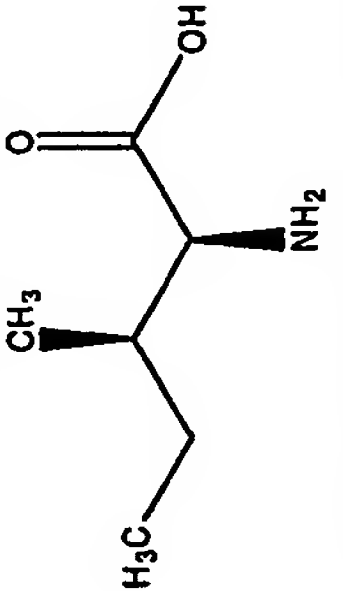
Co-Crystal Former	MW (g/mol)	MP (°C)	Class	Functionality	# acceptors	# donors	Molecular Structure	pKa Values
Hippuric acid	179.17	187-188	1	Amide, NH, COOH	2	2		3.55
Histidine	155.16	287 (dec.)	1	Amine, COOH, Imidazole	2	4		1.78, 5.97, 8.97
Hydroquinone*	110.11	170-171	2	OH, Phenol	2	2		~10
Imidazole	68.08	90-91	1	NH	1	1		6.92
Ipriflavone	280.32	115-117	1	Ketone, ether	3	0		
Isoleucine	131.17	168-170 (sub.)	1	Amine, COOH	1	3		2.32, 9.76

TABLE I

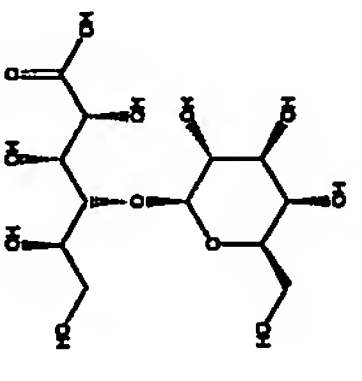
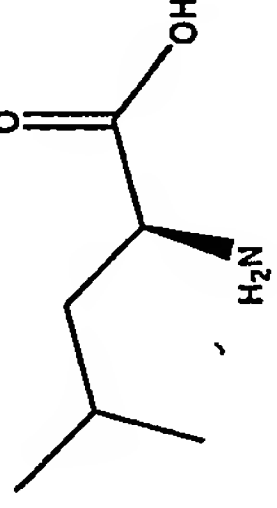
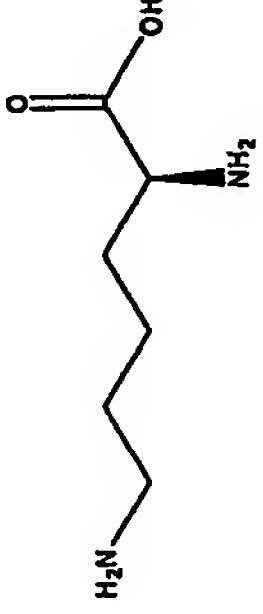

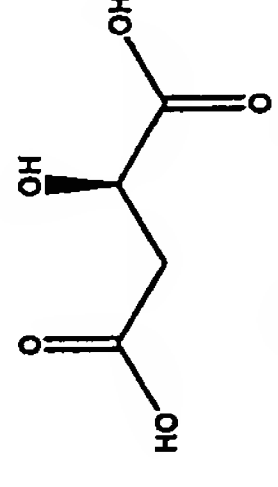
Co-Crystal Former	MW (g/mol)	MP (°C)	Class	Functionality	# acceptors	# donors	Molecular Structure	pKa Values
Lactobionic acid	358.3	128-130	2	Alcohol, carboxylic acid, ether	1	9		3.2
Lauric acid	200.32	44-48	1	Carboxylic acid	1	1	$\text{CH}_3(\text{CH}_2)_{10}\text{COOH}$	~4.5
Leucine	131.17	145-148 (sub.)	1	Carboxylic acid, amine	1	3		2.36, 9.6
Lysine	146.19	225 (dec.)	1	Amine, COOH	1	5		2.2, 8.9, 10.28
Maleic	116.07	138-139	1	COOH	2	2		1.92, 6.23
Malic acid	134.09	131-132	1	OH, COOH	3	3		3.46, 5.1

TABLE I

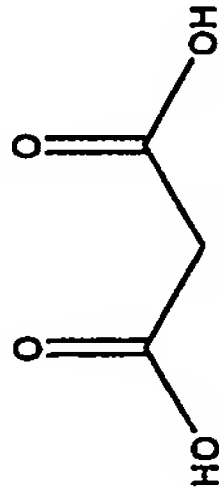
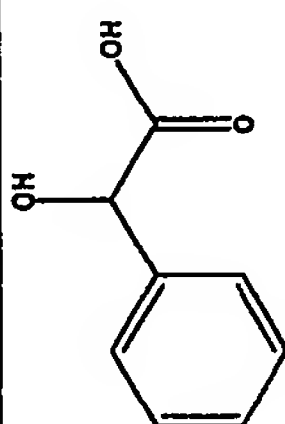
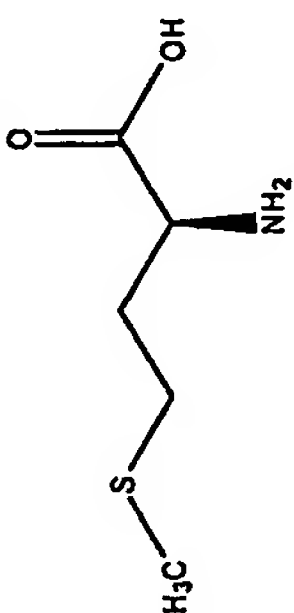
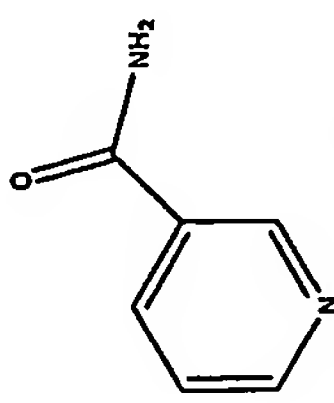
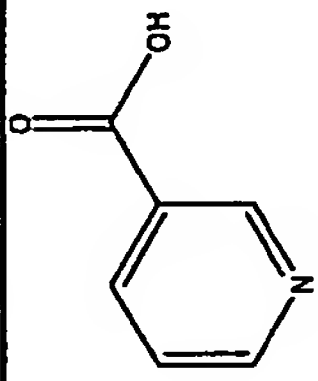
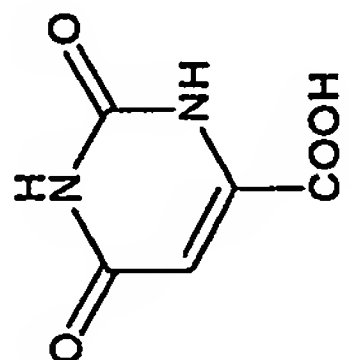
Co-Crystal Former	MW (g/mol)	MP (°C)	Class	Functionality	# acceptors	# donors	Molecular Structure	pKa Values
Malonic	104.06	135	1	COOH	2	2		2.83, 5.70
Mandelic acid	152.15	119	1	OH, COOH	2	2		3.37
Methionine	149.21	280-282 (dec.)	1	Amine, COOH, S- Me	2	3		2-3, 9
Nicotinamide	122.12	128-131	1	Pyridine, amide	2	2		3.3
Nicotinic acid	123.11	236-237	2	Carboxylic acid, pyridine	2	1		2.07(B), 4.85
Orotic acid	156.1	345-346	2	Carboxylic acid, lactam	3	3		5.85, 8.95



TABLE I

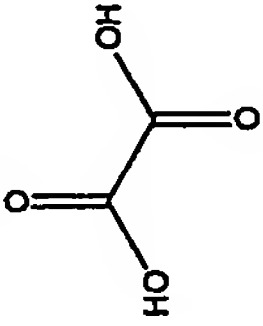
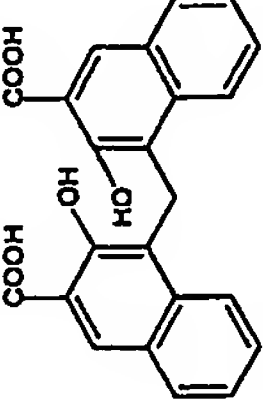
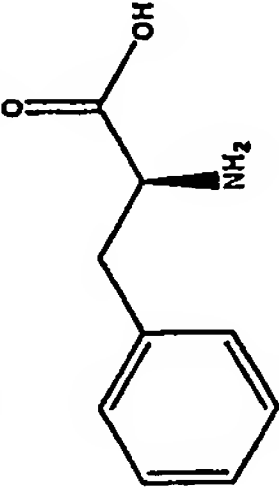
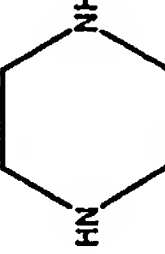
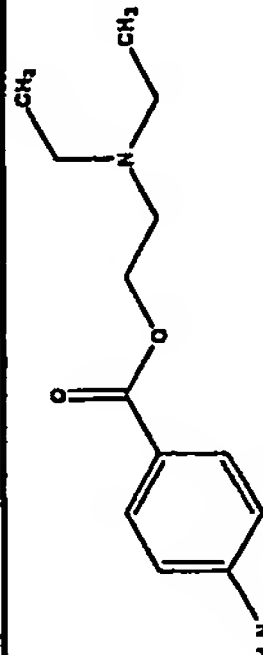
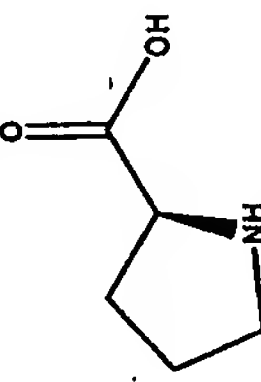
Co-Crystal Former	MW (g/mol)	MP (°C)	Class	Functionality	# acceptors	# donors	Molecular Structure	pKa Values
Oxalic acid	90.04	189 (dec)	2	Carboxylic acid	2	2		1.27, 4.27
Palmitic acid	256.43	63-64	1	Carboxylic acid	1	1	$\text{CH}_3(\text{CH}_2)_{14}\text{COOH}$	4.9
Pamoic	388.38	280 (dec)	2	Carboxylic acid, phenol	2	4		2.51, 3.1
Phenylalanine	165.19	283 (dec.)	1	Amine, COOH	1	3		~2, ~9
Piperazine	86.14	106	1	NH	0	2		9.82(B)
Procaine	236.31	61	1	Amine, C=O	2	2		8.9(B)
Proline	115.13	220-222 (dec.)	1	COOH, NH	1	2		1.99, 10.6

TABLE I

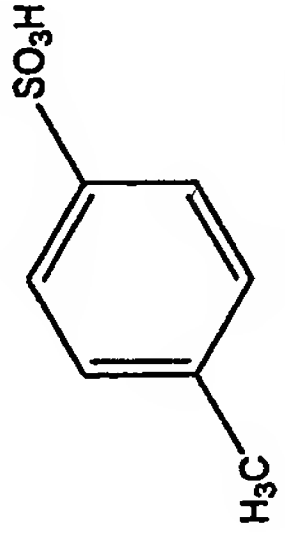
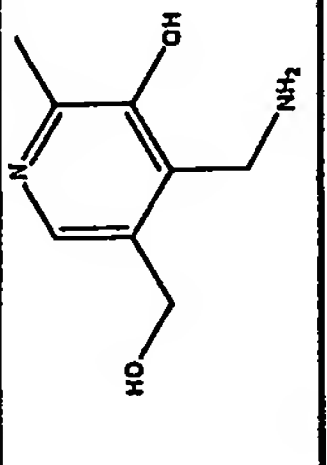
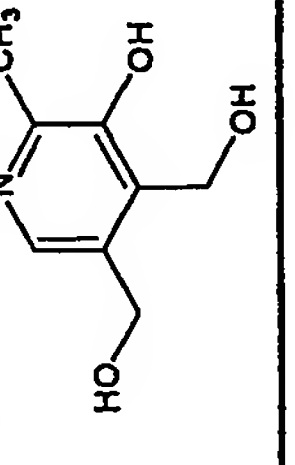
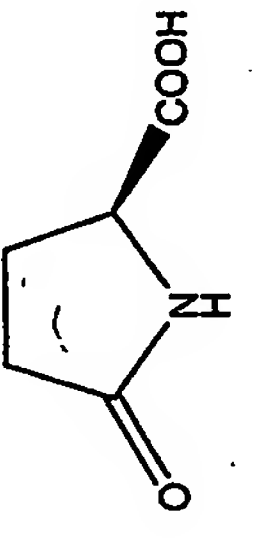
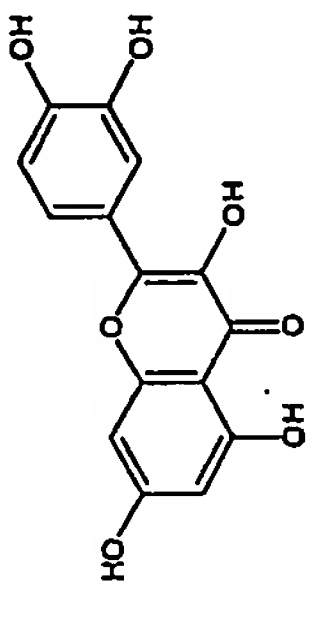
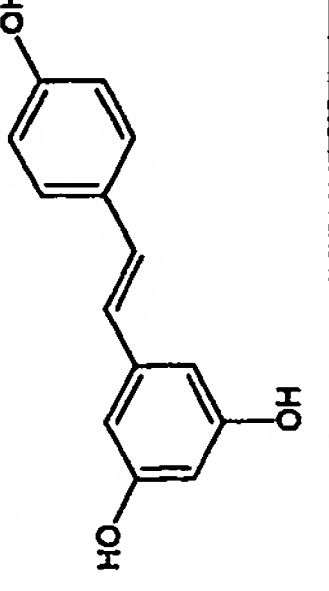
Co-Crystal Former	MW (g/mol)	MP (°C)	Class	Functionality	# acceptors	# donors	Molecular Structure	pKa Values
p-Toluenesulfonic acid	172.2	106-107	2	Sulfonic acid	2	1		-1.34
Pyridoxamine	168	193-194	2	OH, Amine, Pyridine	3	4		~9
Pyridoxine	170	160	2	Alcohol, Pyridine	3	3		~9
Pyroglutamic acid	129.12	162	2	Carboxylic acid, Lactam	2	2		3.32
Quercetin	302.24	314 dec.	1	Phenol, ether, ketone	2	5		
Resveratrol	228.24	253-255	1	Phenol	0	3		

TABLE I

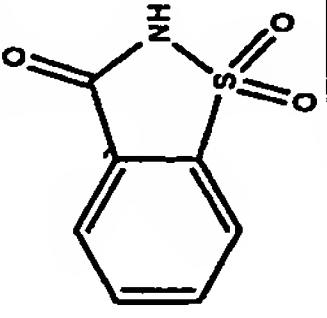
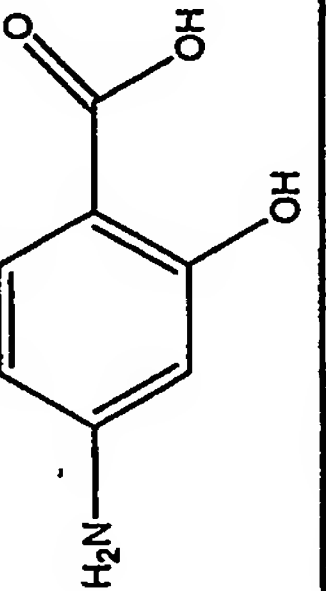
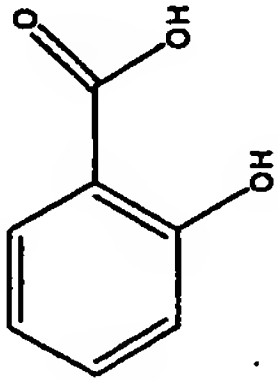
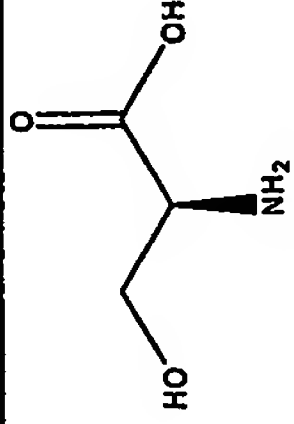
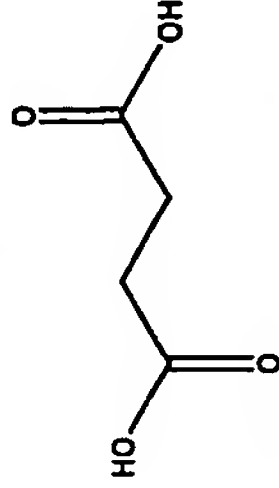
Co-Crystal Former	MW (g/mol)	MP (°C)	Class	Functionality	# acceptors	# donors	Molecular Structure	pKa Values
Saccharin	183.19	228-230	1	Amide, C=O, S=O, N-H	3	1		2
Salicylic acid, 4-amino	153.14	150-151	3	COOH, OH, Aniline	1	4		3.25, 10, 3.5(B)
Salicylic acid	138.12	159	3	COOH, OH	2	2		2.98, 13.82
Sebacic acid	202.25	134.5	1	Carboxylic acid	2	2	HOOC(CH <sub>2</sub> ) <sub>8</sub> COOH	4.59, 5.59
Serine	105.09	228 (dec.)	1	Carboxylic acid, amine, OH	2	3		2.21, 9.15
Stearic acid	284.47	70-71	1	Carboxylic acid	1	1	CH <sub>3</sub> (CH <sub>2</sub> ) <sub>16</sub> COOH	4.9
Succinic acid	118.09	185-187	1	Carboxylic acid	2	2		4.21, 5.64

TABLE I

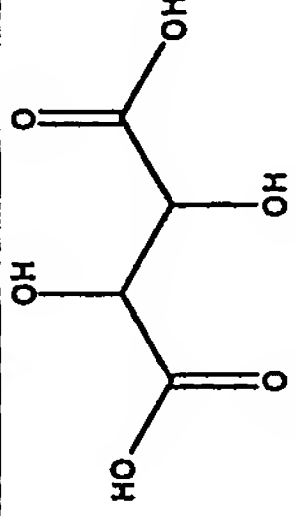
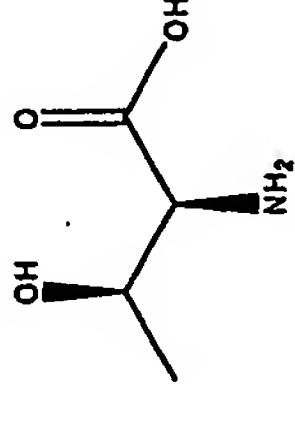
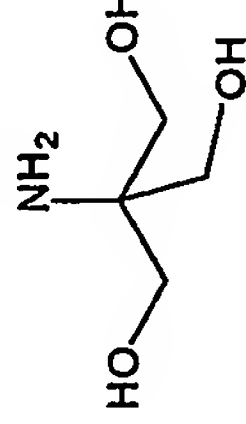
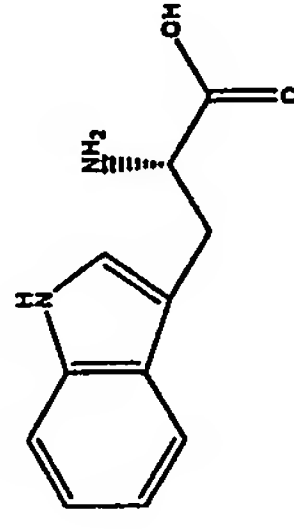
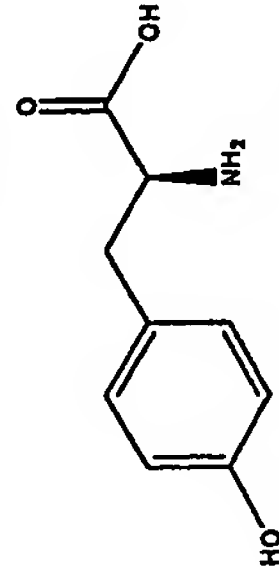
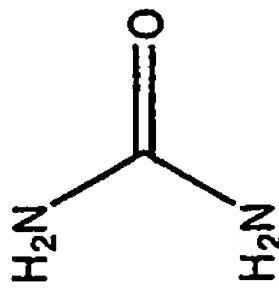
Co-Crystal Former	MW (g/mol)	MP (°C)	Class	Functionality	# acceptors	# donors	Molecular Structure	pKa Values
Tartaric acid	150.09	205-206	1	Carboxylic acid	4	4		3.02, 4.36
Threonine	119.12	255-257 (dec.)	1	Amine, COOH, OH	2	4		2.15, 9.12
TRIS	121.13	171-172	2	Amine, OH	3	5		5.91, 8.3
Tryptophan	204.23	289 (dec.)	1	Amine, COOH, Indole	1	4		2.38, 9.39
Tyrosine	181.19	342-344	1	Amine, COOH, OH	2	3		2.2, 9.11, 10.07
Urea	60.06	Dec.	1	C=O, NH2	1	4		~8

TABLE I

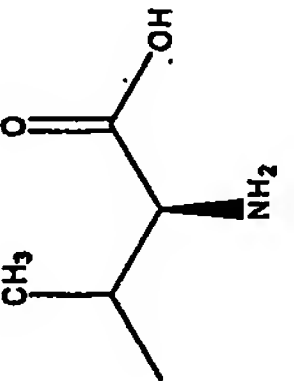
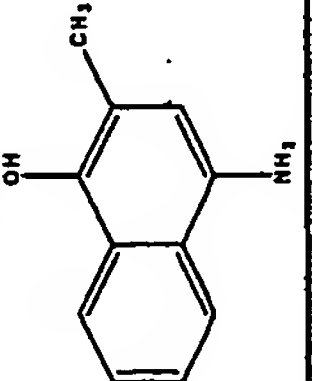
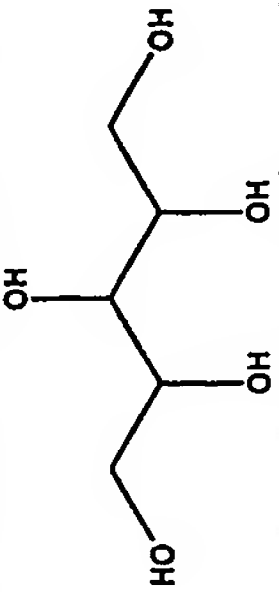
Co-Crystal Former	MW (g/mol)	MP (°C)	Class	Functionality	# acceptors	# donors	Molecular Structure	pKa Values
Valine	117.15	315	1	Amine, COOH	1	3		~4.5, ~9
Vitamin K5	209.68	280-282 (dec.)	3	Amine, OH	1	3		~9
Xylitol	152.15	93-95 (l)	2	OH	5	5		~9



TABLE II

Co-crystal Former		Co-crystal Former Functional Group	Interacting Group							
			pyridine	ketone	aldehyde	ether	ester	amide	Carboxylic Acid	
1,5-Napthalene-disulfonic Acid		Sulfonic Acid	pyridine	ketone				amide	Acid	
1-Hydroxy-2-naphthoic acid		Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol	
1-Hydroxy-2-naphthoic acid		alcohol	alcohol	ketone	thiol	amide	amine	aniline	phenol	
4-Aminobenzoic Acid		Amine	alcohol	ketone	thiol	amide	amine	aniline	phenol	
4-Aminobenzoic Acid		Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol	
4-aminopyridine		Amine	alcohol	ketone	thiol	amide	amine	aniline	phenol	
4-aminopyridine		Pyridine	*alcohol	pyridinium	*	*amide	nitro	*amine	*Carboxylic Acid	
4-Chlorobenzene-Sulfonic Acid		Sulfonic Acid	pyridine	ketone	aldehyde	ether		amide	Carboxylic Acid	
4-ethoxyphenyl Urea		Amide	alcohol	ketone	thiol	amide	amine	aniline	phenol	
4-ethoxyphenyl Urea		Amine	alcohol	ketone	thiol	amide	amine	aniline	phenol	
7-oxo-DHEA		alcohol	alcohol	ketone	thiol	amide	amine	aniline	phenol	
7-oxo-DHEA		Ketone	alcohol		thiol	amide	amine	aniline	phenol	
Acesulfame		Sulfone	pyridine	ketone	aldehyde	ether	ester	amide	carboxilic acid	
Acesulfame		Amide	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Acetohydroxamic Acid		Amide	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Acetohydroxamic Acid		Amine	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Acetohydroxamic Acid		Alcohol	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Adenine		Amine	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Adenine		N	*alcohol	pyridinium	*	*amide	nitro	*amine	*carboxilic acid	
Adipic acid		Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Alanine		Amine	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Alanine		Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Allopurinaol		Alcohol	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Allopurinaol		Amine	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Arginine		Amine	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Arginine		Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Ascorbic Acid		Ketone	alcohol		thiol	amide		aniline	phenol	
Ascorbic Acid		Alcohol	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Ascorbic Acid		Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol	

TABLE II

Co-crystal Former	amine	metals	thioether		thioether		sulfate	alcohol		
1,5-Naphthalene-disulfonic Acid	phosphate	sulfate	sulfone	nitrate			pyridine	carboxylic acid	metals	aldehyde
1-Hydroxy-2-naphthoic acid	phosphate	sulfate	sulfone	nitrate			pyridine	carboxylic acid	metals	aldehyde
1-Hydroxy-2-naphthoic acid	phosphate	sulfate	sulfone	nitrate			pyridine		carboxylic acid	metals
4-Aminobenzoic Acid	phosphate	sulfate	sulfone	nitrate			pyridine		Carboxylic Acid	metals
4-Aminobenzoic Acid	phosphate	sulfate	sulfone	nitrate			pyridine		carboxylic acid	metals
4-aminopyridine	*sulfonamide	*ketone	ether	triazole				ammonium	oxime	*chlorine
4-Chlorobenzene-Sulfonic Acid	amine	metals	thioether				sulfate	alcohol		
4-ethoxyphenyl Urea	phosphate	sulfate	sulfone	nitrate			pyridine		Carboxylic Acid	metals
4-ethoxyphenyl Urea	phosphate	sulfate	sulfone	nitrate			pyridine		carboxylic acid	metals
7-oxo-DHEA	phosphate	sulfate	sulfone	nitrate			pyridine	carboxylic acid	metals	aldehyde
7-oxo-DHEA	phosphate	sulfate	sulfone	nitrate			pyridine		Carboxylic Acid	metals
Acesulfame	amine	metals	thioether				sulfate	alcohol		
Acesulfame	phosphate	sulfate	sulfone	nitrate			pyridine		Carboxylic Acid	metals
Acetohydroxamic Acid	phosphate	sulfate	sulfone	nitrate			pyridine		carboxylic acid	metals
Acetohydroxamic Acid	phosphate	sulfate	sulfone	nitrate			pyridine		carboxylic acid	metals
Acetohydroxamic Acid	phosphate	sulfate	sulfone	nitrate			pyridine		Carboxylic Acid	metals
Adenine	phosphate	sulfate	sulfone	nitrate			pyridine		carboxylic acid	metals
Adenine	*sulfonamide	*ketone	ether	triazole				ammonium	oxime	*chlorine
Adipic acid	phosphate	sulfate	sulfone	nitrate			pyridine		carboxylic acid	metals
Alanine	phosphate	sulfate	sulfone	nitrate			pyridine		carboxylic acid	metals
Alanine	phosphate	sulfate	sulfone	nitrate			pyridine		carboxylic acid	metals
Allopurinol	phosphate	sulfate	sulfone	nitrate			pyridine		Carboxylic Acid	metals
Allopurinol	phosphate	sulfate	sulfone	nitrate			pyridine		carboxylic acid	metals
Arginine	phosphate	sulfate	sulfone	nitrate			pyridine		carboxylic acid	metals
Arginine	phosphate	sulfate	sulfone	nitrate			pyridine		carboxylic acid	metals
Ascorbic Acid	phosphate	sulfate	sulfone	nitrate			pyridine		Carboxylic Acid	metals
Ascorbic Acid	phosphate	sulfate	sulfone	nitrate			pyridine		Carboxylic Acid	metals
Ascorbic Acid	phosphate	sulfate	sulfone	nitrate			pyridine		carboxylic acid	metals

TABLE II

Co-crystal Former	ester	ether	cyano		thionedisulfide	pyrrolidindione		iodine	bromine	chlorine	s-heterocyclic
1,5-Napthalene-disulfonic Acid	ester	ether	cyano				fur		bromine	chlorine	s-heterocyclic
1-Hydroxy-2-naphthoic acid	ester	ether	cyano				fur		bromine	chlorine	s-heterocyclic
1-Hydroxy-2-naphthoic acid	aldehyde	ester	ether		cyano			fur	bromine	bromine	chlorine
4-Aminobenzoic Acid	aldehyde	ester	ether		cyano			fur	bromine	bromine	chlorine
4-Aminobenzoic Acid	aldehyde	ester	ether		cyano			fur	bromine	bromine	chlorine
4-aminopyridine		thiol	n-heterocyclic ring							hydrazone	thiocyanate
4-aminopyridine											
4-Chlorobenzene-Sulfonic Acid											
4-ethoxyphenyl Urea	aldehyde	ester	ether		cyano			fur	bromine	bromine	chlorine
4-ethoxyphenyl Urea	aldehyde	ester	ether		cyano			fur	bromine	bromine	chlorine
7-oxo-DHEA	ester	ether	cyano			fur		bromine	chlorine	chlorine	s-heterocyclic
7-oxo-DHEA	aldehyde	ester	ether		cyano			fur	bromine	bromine	chlorine
Acesulfame											
Acesulfame	aldehyde	ester	ether		cyano			fur	bromine	bromine	chlorine
Acetohydroxamic Acid	aldehyde	ester	ether		cyano			fur	bromine	bromine	chlorine
Acetohydroxamic Acid	aldehyde	ester	ether		cyano			fur	bromine	bromine	chlorine
Acetohydroxamic Acid	aldehyde	ester	ether		cyano			fur	bromine	bromine	chlorine
Adenine	aldehyde	ester	ether		cyano			fur	bromine	bromine	chlorine
Adenine		thiol	n-heterocyclic ring								
Adipic acid	aldehyde	ester	ether		thionedisulfide	pyrrolidindione		iodine	hydrazone	thiocyanate	
Alanine	aldehyde	ester	ether		cyano			fur	bromine	bromine	chlorine
Alanine	aldehyde	ester	ether		cyano			fur	bromine	bromine	chlorine
Allopurinaol	aldehyde	ester	ether		cyano			fur	bromine	bromine	chlorine
Allopurinaol	aldehyde	ester	ether		cyano			fur	bromine	bromine	chlorine
Arginine	aldehyde	ester	ether		cyano			fur	bromine	bromine	chlorine
Arginine	aldehyde	ester	ether		cyano			fur	bromine	bromine	chlorine
Ascorbic Acid	aldehyde	ester	ether		cyano			fur	bromine	bromine	chlorine
Ascorbic Acid	aldehyde	ester	ether		cyano			fur	bromine	bromine	chlorine
Ascorbic Acid	aldehyde	ester	ether		cyano			fur	bromine	bromine	chlorine

TABLE II

Co-crystal Former	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	fluorine
1,5-Naphthalene-disulfonic Acid	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	fluorine
1-Hydroxy-2-naphthoic acid	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	fluorine
1-Hydroxy-2-naphthoic acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	phosphate ester	
4-Aminobenzoic Acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	phosphate ester	
4-Aminobenzoic Acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	phosphate ester	
4-aminopyridine	s-heterocyclic	pyridine	cyano	n-heterocyclic	phosphate ester	
4-aminopyridine	*bromine		hydroxamic acid	cyano	*sulfonic acid	*phosphoric acid
4-Chlorobenzene-Sulfonic Acid						
4-ethoxyphenyl Urea	s-heterocyclic	pyridine	cyano	n-heterocyclic	phosphate ester	
4-ethoxyphenyl Urea	s-heterocyclic	pyridine	cyano	n-heterocyclic	phosphate ester	
7-oxo-DHEA	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	fluorine
7-oxo-DHEA	s-heterocyclic	pyridine	cyano	n-heterocyclic	phosphate ester	
Acesulfame						
Acesulfame	s-heterocyclic	pyridine	cyano	n-heterocyclic	phosphate ester	
Acetohydroxamic Acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	phosphate ester	
Acetohydroxamic Acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	phosphate ester	
Acetohydroxamic Acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	phosphate ester	
Adenine	s-heterocyclic	pyridine	cyano	n-heterocyclic	phosphate ester	
Adenine	*bromine		hydroxamic acid	cyano	*sulfonic acid	*phosphoric acid
Adipic acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	phosphate ester	
Alanine	s-heterocyclic	pyridine	cyano	n-heterocyclic	phosphate ester	
Alanine	s-heterocyclic	pyridine	cyano	n-heterocyclic	phosphate ester	
Allopurinol	s-heterocyclic	pyridine	cyano	n-heterocyclic	phosphate ester	
Allopurinol	s-heterocyclic	pyridine	cyano	n-heterocyclic	phosphate ester	
Arginine	s-heterocyclic	pyridine	cyano	n-heterocyclic	phosphate ester	
Arginine	s-heterocyclic	pyridine	cyano	n-heterocyclic	phosphate ester	
Ascorbic Acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	phosphate ester	
Ascorbic Acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	phosphate ester	
Ascorbic Acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	phosphate ester	



## TABLE II

[illegible]



TABLE II

Co-crystal Former			
1,5-Naphthalene-disulfonic Acid			
1-Hydroxy-2-naphthoic acid			
1-Hydroxy-2-naphthoic acid			
4-Aminobenzoic Acid	iodine		
4-Aminobenzoic Acid	iodine		
4-aminopyridine	iodine		
4-aminopyridine			
4-Chlorobenzene-Sulfonic Acid			
4-ethoxyphenyl Urea	iodine	epoxide	peroxide
4-ethoxyphenyl Urea	iodine		
7-oxo-DHEA			
7-oxo-DHEA	iodine		
Acesulfame			
Acesulfame	iodine	epoxide	peroxide
Acetohydroxamic Acid	iodine	epoxide	peroxide
Acetohydroxamic Acid	iodine		
Acetohydroxamic Acid	iodine	epoxide	
Adenine	iodine		
Adenine			
Adipic acid	iodine		
Alanine	iodine		
Alanine	iodine		
Allopurinol	iodine	epoxide	
Allopurinol	iodine		
Arginine	iodine		
Arginine	iodine		
Ascorbic Acid	iodine		
Ascorbic Acid	iodine	epoxide	
Ascorbic Acid	iodine		

TABLE II

Co-crystal Former	Co-crystal Former Functional Group	Interacting Group									
Asparagine	Amine	alcohol	ketone	thiol	amide	amine	aniline	phenol			
Asparagine	Amide	alcohol	ketone	thiol	amide	amine	aniline	phenol			
Asparagine	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol			
Aspartic Acid	Amine	alcohol	ketone	thiol	amide	amine	aniline	phenol			
Aspartic Acid	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol			
Benzenesulfonic Acid	Sulfonic Acid	pyridine	ketone	aldehyde	ether	ester	amide	Carboxylic Acid			
	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol			
	Ketone	alcohol		thiol	amide	amine	aniline	phenol			
	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol			
	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol			
	Ketone	alcohol		thiol	amide	amine	aniline	phenol			
	Phenol	amine	amide	sulfoxide	n	pyridine	cyano	aldehyde			
	Ether	aromatic-N	amide	amine	aromatic_s	Sp2 amine	sulfoxide	chlorate			
	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol			
	Alcohol	alcohol	ketone	thiol	amide	amine	aniline	phenol			
Clemizole	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol			
	Pyrrolidine	*alcohol	pyridinium	*	*amide	nitro	*amine	*carboxilic acid			
	Amine	alcohol	ketone	thiol	amide	amine	aniline	phenol			
	Sulfonic Acid	pyridine	ketone	aldehyde	ether	ester	amide	Carboxylic Acid			
Cyclamic Acid	Amine	alcohol	ketone	thiol	amide	amine	aniline	phenol			
	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol			
	Thiol	carboxylic acid	sodium	aldehyde	ketone	-N	cadmium				
Cysteine	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol			
	Amine	alcohol	ketone	thiol	amide	amine	aniline	phenol			
	Ether	aromatic-N	amide	amine	aromatic_s	Sp2 amine	sulfoxide	chlorate			
	Alcohol	alcohol	ketone	thiol	amide	amine	aniline	phenol			
Dimethylglycine	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol			
	Amine	alcohol	ketone	thiol	amide	amine	aniline	phenol			
	Ether	aromatic-N	amide	amine	aromatic_s	Sp2 amine	sulfoxide	chlorate			
	Alcohol	alcohol	ketone	thiol	amide	amine	aniline	phenol			
Fumaric Acid	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol			
	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol			
	Alcohol	alcohol	ketone	thiol	amide	amine	aniline	phenol			
	Ketone	alcohol	ketone	thiol	amide	amine	aniline	phenol			

TABLE II

Co-crystal Former	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Asparagine	phosphate	sulfate	sulfone	nitrate	pyridine	Carboxylic Acid	metals
Asparagine	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Aspartic Acid	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Aspartic Acid	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Benzenesulfonic Acid	amine	metals	thioether		sulfate	alcohol	
Benzoic Acid	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Caffeine	phosphate	sulfate	sulfone	nitrate	pyridine	Carboxylic Acid	metals
Camphoric acid	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Capric acid	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Genistein	phosphate	sulfate	sulfone	nitrate	pyridine	Carboxylic Acid	metals
Genistein		alcohol		ester	ether	chlorine	fluorine
Genistein	chlorine		cyano	ester	amine	nitrate	bromine
Cinnamic acid	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Citric Acid	phosphate	sulfate	sulfone	nitrate	pyridine	Carboxylic Acid	metals
Citric Acid	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Clemizole	*sulfonamide	*ketone	ether	triazole		oxime	*chlorine
Cyclamic Acid	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Cyclamic Acid	amine	metals	thioether		sulfate	alcohol	
Cysteine	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Cysteine	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Cysteine	arsenic	chlorine	alcohol	potassium	Ru	Rb	Sb
Dimethylglycine	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Dimethylglycine	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
D-ribose	chlorine		cyano	ester	amine	nitrate	bromine
D-ribose	phosphate	sulfate	sulfone	nitrate	pyridine	Carboxylic Acid	metals
Fumaric Acid	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Galactaric acid	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Galactaric acid	phosphate	sulfate	sulfone	nitrate	pyridine	metals	aldehyde
Chrysin	phosphate	sulfate	sulfone	nitrate	pyridine	Carboxylic Acid	metals

TABLE II

Co-crystal Former	aldehyde	ester	ether	cyano				furane	bromine	chlorine
Asparagine	aldehyde	ester	ether	cyano				furane	bromine	chlorine
Asparagine	aldehyde	ester	ether	cyano				furane	bromine	chlorine
Aspartic Acid	aldehyde	ester	ether	cyano				furane	bromine	chlorine
Aspartic Acid	aldehyde	ester	ether	cyano				furane	bromine	chlorine
Benzenesulfonic Acid										
Benzoic Acid	aldehyde	ester	ether	cyano				furane	bromine	chlorine
Caffeine	aldehyde	ester	ether	cyano				furane	bromine	chlorine
Camphoric acid	aldehyde	ester	ether	cyano				furane	bromine	chlorine
Capric acid	aldehyde	ester	ether	cyano				furane	bromine	chlorine
Genistein	aldehyde	ester	ether	cyano				furane	bromine	chlorine
Genistein	bromine	iodine	ketone	sulfonic acid	sulfate			phosphate	phosphonic acid	carboxylic acid
Genistein	aldehyde	ketone	peroxide	epoxide					heterocyclic-S	iodine
Cinnamic acid	aldehyde	ester	ether	cyano				furane	bromine	chlorine
Citric Acid	aldehyde	ester	ether	cyano				furane	bromine	chlorine
Citric Acid	aldehyde	ester	ether	cyano				furane	bromine	chlorine
Clemizole		thiol	n-heterocyclic ring	thionedisulfide				iodine	hydrazone	thiocyanate
Cyclamic Acid	aldehyde	ester	ether	cyano				furane	bromine	chlorine
Cyclamic Acid										
Cysteine	aldehyde	ester	ether	cyano				furane	bromine	chlorine
Cysteine	aldehyde	ester	ether	cyano				furane	bromine	chlorine
Cysteine										
Dimethylglycine	aldehyde	ester	ether	cyano				furane	bromine	chlorine
Dimethylglycine	aldehyde	ester	ether	cyano				furane	bromine	chlorine
D-ribose	aldehyde	ketone	peroxide	epoxide					heterocyclic-S	iodine
D-ribose	aldehyde	ester	ether	cyano				furane	bromine	chlorine
Fumaric Acid	aldehyde	ester	ether	cyano				furane	bromine	chlorine
Galactaric acid	aldehyde	ester	ether	cyano				furane	bromine	chlorine
Galactaric acid	ester	ether	cyano		furane			bromine	chlorine	s-heterocyclic
Chrysin	aldehyde	ester	ether	cyano				furane	bromine	chlorine

TABLE II

Co-crystal Former	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Asparagine	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Asparagine	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Asparagine	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Aspartic Acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Aspartic Acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Benzenesulfonic Acid						
Benzoic Acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Caffeine	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Camphoric acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Capric acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Genistein	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Genistein	nitro	sulfone	aniline			
Genistein	ester	ether	carboxylic acid	sulfate	sulfone	alcohol
Cinnamic acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Citric Acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Citric Acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Clemizole	*bromine		hydroxamic acid	cyano	carboxamide	*sulfonic acid
Cyclamic Acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Cyclamic Acid						
Cyclamic Acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Cysteine	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Cysteine	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Cysteine						
Dimethylglycine	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Dimethylglycine	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
D-ribose	ester	ether	carboxylic acid	sulfate	sulfone	alcohol
D-ribose	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Fumaric Acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Galactaric acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Galactaric acid	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	fluorine
Chrysin	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester



TABLE II

Co-crystal Former	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Asparagine	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Asparagine	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Asparagine	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Aspartic Acid	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Aspartic Acid	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Benzenesulfonic Acid								
Benzoic Acid	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Caffeine	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Camphoric acid	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Capric acid	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Genistein	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Genistein								
Genistein		phosphphate	cyanamide					
Cinnamic acid	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Citric Acid	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Citric Acid	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Clemizole	N-oxide	ester	ether	fluorine	acetate	thione	dithiadiazocyclopentadienyl	
Cyclamic Acid	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Cyclamic Acid								
Cyclamic Acid	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Cysteine	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Cysteine	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Cysteine								
Dimethylglycine	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Dimethylglycine	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
D-ribose		phosphphate	cyanamide					
D-ribose	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Fumaric Acid	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Galactaric acid	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Galactaric acid	carbamate	imidazole	BF4					
Chrysin	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea

TABLE II

Co-crystal Former	iodine	epoxide	peroxide
Asparagine	iodine		
Asparagine	iodine		
Asparagine	iodine		
Aspartic Acid	iodine		
Aspartic Acid	iodine		
Benzenesulfonic Acid			
Benzoic Acid	iodine		
Caffeine	iodine		
Camphoric acid	iodine		
Capric acid	iodine		
Genistein	iodine		
Genistein			
Genistein			
Cinnamic acid	iodine		
Citric Acid	iodine	epoxide	
Citric Acid	iodine		
Clemizole			
Cyclamic Acid	iodine		
Cyclamic Acid			
Cysteine	iodine		
Cysteine	iodine		
Cysteine			
Dimethylglycine	iodine		
Dimethylglycine	iodine		
D-ribose			
D-ribose	iodine	epoxide	
Fumaric Acid	iodine		
Galactaric acid	iodine		
Galactaric acid	iodine		
Chrysin	iodine		

TABLE II

Co-crystal Former	Co-crystal Former Functional Group	Interacting Group									
		amine	amide	sulfoxide	n	aromatic_s	pyridine	cyano	aldehyde		
Chrysin	Phenol	aromatic-N	amide	amine	amide	amide	Sp2 amine	sulfoxide	chlorate		
Chrysin	Ether	alcohol	ketone	thiol	amide	amide	amine	aniline	phenol		
Gentisic acid	Carboxylic Acid	amine	amide	sulfoxide	n	amide	pyridine	cyano	aldehyde		
Gentisic acid	Phenol	alcohol	ketone	thiol	amide	amide	amine	aniline	phenol		
Glucamine, N-methyl	alcohol	alcohol	ketone	thiol	amide	amide	amine	aniline	phenol		
Glucamine, N-methyl	Amine	alcohol	ketone	thiol	amide	amide	amine	aniline	phenol		
Gluconic Acid	Alcohol	alcohol	ketone	thiol	amide	amide	amine	aniline	phenol		
Gluconic Acid	Carboxylic Acid	alcohol	ketone	thiol	amide	amide	amine	aniline	phenol		
Glucosamine	alcohol	alcohol	ketone	thiol	amide	amide	amine	aniline	phenol		
Glucuronic acid	Carboxylic Acid	alcohol	ketone	thiol	amide	amide	amine	aniline	phenol		
Glucuronic acid	alcohol	alcohol	ketone	thiol	amide	amide	amine	aniline	phenol		
Glucuronic acid	Aldehyde	alcohol	ketone	thiol	amide	amide	amine	aniline	phenol		
Glutamic Acid	Amine	alcohol	ketone	thiol	amide	amide	amine	aniline	phenol		
Glutamic Acid	Carboxylic Acid	alcohol	ketone	thiol	amide	amide	amine	aniline	phenol		
Glutamine	Amine	alcohol	ketone	thiol	amide	amide	amine	aniline	phenol		
Glutamine	Amide	alcohol	ketone	thiol	amide	amide	amine	aniline	phenol		
Glutamine	Carboxylic Acid	alcohol	ketone	thiol	amide	amide	amine	aniline	phenol		
Glutaric Acid	Carboxylic Acid	alcohol	ketone	thiol	amide	amide	amine	aniline	phenol		
Glycine	Amine	alcohol	ketone	thiol	amide	amide	amine	aniline	phenol		
Glycine	Carboxylic Acid	alcohol	ketone	thiol	amide	amide	amine	aniline	phenol		
Glycolic Acid	Alcohol	alcohol	ketone	thiol	amide	amide	amine	aniline	phenol		
Glycolic Acid	Carboxylic Acid	alcohol	ketone	thiol	amide	amide	amine	aniline	phenol		
Hippuric Acid	Amide	alcohol	ketone	thiol	amide	amide	amine	aniline	phenol		
Hippuric Acid	Amine	alcohol	ketone	thiol	amide	amide	amine	aniline	phenol		
Hippuric Acid	Carboxylic Acid	alcohol	ketone	thiol	amide	amide	amine	aniline	phenol		
Histidine	Amine	alcohol	ketone	thiol	amide	amide	amine	aniline	phenol		
Histidine	Carboxylic Acid	alcohol	ketone	thiol	amide	amide	amine	aniline	phenol		
Histidine	Imidazole	imidazole	chlorine	acetamide	carboxylate			thione	nitro		
Hydroquinone	Alcohol	alcohol	ketone	thiol	amide		amine	aniline	phenol		
Hydroquinone	Phenol	amine	amide	sulfoxide	n		pyridine	cyano	aldehyde		
Imidazole	Amine	alcohol	ketone	thiol	amide		amine	aniline	phenol		

## TABLE II

Co-crystal Former	chlorine	phosphate	alcohol	cyano	ester	ether	n-oxide	chlorine	fluorine
Chrysin	chlorine			cyano	ester	amine	nitro	nitrate	bromine
Chrysin	phosphate		sulfate	sulfone	nitrate	pyridine		carboxilic acid	metals
Gentisic acid			alcohol		ester	ether	n-oxide	chlorine	fluorine
Gentisic acid	phosphate		sulfate	sulfone	nitrate	pyridine	carboxilic acid	metals	aldehyde
Glucamine, N-methyl	phosphate		sulfate	sulfone	nitrate	pyridine		carboxilic acid	metals
Glucamine, N-methyl	phosphate		sulfate	sulfone	nitrate	pyridine		Carboxylic Acid	metals
Gluconic Acid	phosphate		sulfate	sulfone	nitrate	pyridine		carboxilic acid	metals
Gluconic Acid	phosphate		sulfate	sulfone	nitrate	pyridine		Carboxylic Acid	metals
Glucosamine	phosphate		sulfate	sulfone	nitrate	pyridine		carboxilic acid	metals
Glucuronic acid	phosphate		sulfate	sulfone	nitrate	pyridine		carboxilic acid	metals
Glucuronic acid	phosphate		sulfate	sulfone	nitrate	pyridine	carboxilic acid	metals	aldehyde
Glucuronic acid	phosphate		sulfate	sulfone	nitrate	pyridine	aromatic	carboxilic acid	metals
Glutamic Acid	phosphate		sulfate	sulfone	nitrate	pyridine		carboxilic acid	metals
Glutamic Acid	phosphate		sulfate	sulfone	nitrate	pyridine		carboxilic acid	metals
Glutamine	phosphate		sulfate	sulfone	nitrate	pyridine		carboxilic acid	metals
Glutamine	phosphate		sulfate	sulfone	nitrate	pyridine		Carboxylic Acid	metals
Glutamine	phosphate		sulfate	sulfone	nitrate	pyridine		carboxilic acid	metals
Glutaric Acid	phosphate		sulfate	sulfone	nitrate	pyridine		carboxilic acid	metals
Glycine	phosphate		sulfate	sulfone	nitrate	pyridine		carboxilic acid	metals
Glycine	phosphate		sulfate	sulfone	nitrate	pyridine		carboxilic acid	metals
Glycolic Acid	phosphate		sulfate	sulfone	nitrate	pyridine		Carboxylic Acid	metals
Glycolic Acid	phosphate		sulfate	sulfone	nitrate	pyridine		carboxilic acid	metals
Hippuric Acid	phosphate		sulfate	sulfone	nitrate	pyridine		carboxilic acid	metals
Hippuric Acid	phosphate		sulfate	sulfone	nitrate	pyridine		carboxilic acid	metals
Hippuric Acid	phosphate		sulfate	sulfone	nitrate	pyridine		carboxilic acid	metals
Hippuric Acid	phosphate		sulfate	sulfone	nitrate	pyridine		carboxilic acid	metals
Histidine	phosphate		sulfate	sulfone	nitrate	pyridine		carboxilic acid	metals
Histidine	phosphate		sulfate	sulfone	nitrate	pyridine		carboxilic acid	metals
Histidine	cyanamide	ketone		cyano	Carboxylic Acid	alcohol		thiol	amine
Hydroquinone	phosphate	sulfate		sulfone	nitrate	pyridine		Carboxylic Acid	metals
Hydroquinone		alcohol			ester	ether	n-oxide	chlorine	fluorine
Imidazole	phosphate	sulfate		sulfone	nitrate	pyridine		carboxilic acid	metals

TABLE II

Co-crystal Former	bromine	iodine	ketone	sulfonic acid	sulfate	phosphate	phosphonic acid	carboxylic acid
Chrysin	aldehyde	ketone	peroxide	epoxide			heterocyclic-S	iodine
Chrysin	aldehyde	ester	ether	ciano		uran	bromine	chlorine
Gentisic acid	bromine	iodine	ketone	sulfonic acid	sulfate	phosphate	phosphonic acid	carboxylic acid
Gentisic acid	ester	ether	ciano		uran	bromine	chlorine	s-heterocyclic
Glucamine, N-methyl	aldehyde	ester	ether	ciano		uran	bromine	chlorine
Glucamine, N-methyl	aldehyde	ester	ether	ciano		uran	bromine	chlorine
Gluconic Acid	aldehyde	ester	ether	ciano		uran	bromine	chlorine
Gluconic Acid	aldehyde	ester	ether	ciano		uran	bromine	chlorine
Glucosamine	aldehyde	ester	ether	ciano		uran	bromine	chlorine
Glucuronic acid	aldehyde	ester	ether	ciano		uran	bromine	chlorine
Glucuronic acid	ester	ether	ciano		uran	bromine	chlorine	s-heterocyclic
Glucuronic acid	aldehyde	ester	ether	ciano		uran	bromine	chlorine
Glutamic Acid	aldehyde	ester	ether	ciano		uran	bromine	chlorine
Glutamic Acid	aldehyde	ester	ether	ciano		uran	bromine	chlorine
Glutamine	aldehyde	ester	ether	ciano		uran	bromine	chlorine
Glutamine	aldehyde	ester	ether	ciano		uran	bromine	chlorine
Glutamine	aldehyde	ester	ether	ciano		uran	bromine	chlorine
Glutaric Acid	aldehyde	ester	ether	ciano		uran	bromine	chlorine
Glycine	aldehyde	ester	ether	ciano		uran	bromine	chlorine
Glycine	aldehyde	ester	ether	ciano		uran	bromine	chlorine
Glycolic Acid	aldehyde	ester	ether	ciano		uran	bromine	chlorine
Glycolic Acid	aldehyde	ester	ether	ciano		uran	bromine	chlorine
Hippuric Acid	aldehyde	ester	ether	ciano		uran	bromine	chlorine
Hippuric Acid	aldehyde	ester	ether	ciano		uran	bromine	chlorine
Hippuric Acid	aldehyde	ester	ether	ciano		uran	bromine	chlorine
Histidine	aldehyde	ester	ether	ciano		uran	bromine	chlorine
Histidine	aldehyde	ester	ether	ciano		uran	bromine	chlorine
	phosphinic acid							
	hemihydrate							
		chlorine	sulfonyl	sulfoxide	amide	fluorine	sulfonate ester	
Histidine	aldehyde	ester	ether	ciano		uran	bromine	chlorine
Hydroquinone	bromine	iodine	ketone	sulfonic acid	sulfate	phosphate	phosphonic acid	carboxylic acid
Imidazole	aldehyde	ester	ether	ciano		uran	bromine	chlorine



TABLE II

Co-crystal Former	nitro	sulfone	aniline	sulfate	sulfone	phosphate ester	alcohol
Chrysin	ester	ether	carboxylic acid				
Chrysin	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Gentisic acid	nitro	sulfone	aniline				
Gentisic acid	pyridine	cyano	n-heterocyclic	ketone	phosphate ester		fluorine
Glucamine, N-methyl	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Glucamine, N-methyl	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Gluconic Acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Gluconic Acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Glucosamine	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Glucuronic acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Glucuronic acid	pyridine	cyano	n-heterocyclic	ketone	phosphate ester		fluorine
Glucuronic acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Glutamic Acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Glutamic Acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Glutamine	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Glutamine	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Glutamine	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Glutaric Acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Glycine	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Glycine	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Glycolic Acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Glycolic Acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Hippuric Acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Hippuric Acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Hippuric Acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Histidine	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Histidine	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Histidine							
Histidine							
Hydroquinone	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Hydroquinone	nitro	sulfone	aniline				
Imidazole	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	



TABLE II

Co-crystal Former			
Chrysin			
Chrysin			
Gentisic acid	iodine		
Gentisic acid			
Glucamine, N-methyl			
Glucamine, N-methyl	iodine		
Gluconic Acid	iodine	epoxide	
Gluconic Acid	iodine		
Glucosamine	iodine	epoxide	
Glucuronic acid	iodine		
Glucuronic acid			
Glucuronic acid	iodine	epoxide	
Glutamic Acid	iodine		
Glutamic Acid	iodine		
Glutamine	iodine		
Glutamine	iodine	epoxide	peroxide
Glutamine	iodine		
Glutaric Acid	iodine		
Glycine	iodine		
Glycine	iodine		
Glycolic Acid	iodine	epoxide	
Glycolic Acid	iodine		
Hippuric Acid	iodine	epoxide	peroxide
Hippuric Acid	iodine		
Hippuric Acid	iodine		
Histidine	iodine		
Histidine	iodine		
Histidine			
Hydroquinone	iodine	epoxide	
Hydroquinone			
Imidazole	iodine		

TABLE II

Co-crystal Former	Co-crystal Former Functional Group	Interacting Group						
		aromatic-N	amide	amine	aromatic_s	Sp2 amine	sulfoxide	chlorate
Ipriflavone	Ether	alcohol			amide	amine	aniline	phenol
Ipriflavone	Ketone	alcohol		thiol	amide	amine	aniline	phenol
Isoleucine	Amine	alcohol	ketone	thiol	amide	amine	aniline	phenol
Isoleucine	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol
Lactobionic acid	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol
Lactobionic acid	alcohol	alcohol	ketone	thiol	amide	amine	aniline	phenol
Lauric acid	Ether	aromatic-N	amide	amine	aromatic_s	Sp2 amine	sulfoxide	chlorate
Leucine	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol
Leucine	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol
Lysine	Amine	alcohol	ketone	thiol	amide	amine	aniline	phenol
Lysine	Amine	alcohol	ketone	thiol	amide	amine	aniline	phenol
Lysine	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol
Maleic	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol
Maleic Acid	Alcohol	alcohol	ketone	thiol	amide	amine	aniline	phenol
Malic Acid	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol
Malonic	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol
Mandelic Acid	Alcohol	alcohol	ketone	thiol	amide	amine	aniline	phenol
Mandelic Acid	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol
Methionine	Amine	alcohol	ketone	thiol	amide	amine	aniline	phenol
Methionine	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol
Methionine	Thioether	-N	amide	amine	s	Sp2 amine	sulfoxide	chlorate
Nicotinamide	Pyridine	*alcohol		*	*amide	nitro	*amine	*Carboxylic Acid
Nicotinamide	Amide	alcohol	ketone	thiol	amide	amine	aniline	phenol
Nicotinic Acid	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol
Nicotinic Acid	Pyridine	*alcohol		*	*amide	nitro	*amine	*Carboxylic Acid
Orotic acid	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol
Orotic acid	Lactam	alcohol	ketone	thiol	amide	amine	aniline	phenol
Oxalic acid	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol
Palmitic acid	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol
Pamoic acid	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol
Pamoic acid	alcohol	alcohol	ketone	thiol	amide	amine	aniline	phenol
Pamoic acid	Phenol	amine	amide	sulfoxide	n	pyridine	cyano	aldehyde

TABLE II

Co-crystal Former	chlorine	sulfate	cyano	ester	amine	nitro	nitrate	bromine
Ipriflavone	phosphate	sulfate	sulfone	nitrate	pyridine		Carboxylic Acid	metals
Ipriflavone	phosphate	sulfate	sulfone	nitrate	pyridine		carboxilic acid	metals
Isoleucine	phosphate	sulfate	sulfone	nitrate	pyridine		carboxilic acid	metals
Isoleucine	phosphate	sulfate	sulfone	nitrate	pyridine		carboxilic acid	metals
lactobionic acid	phosphate	sulfate	sulfone	nitrate	pyridine		metals	aldehyde
Lactobionic acid	chlorine		cyano	ester	amine	nitro	nitrate	bromine
Lauric acid	phosphate	sulfate	sulfone	nitrate	pyridine		carboxilic acid	
Leucine	phosphate	sulfate	sulfone	nitrate	pyridine		Carboxylic Acid	metals
Leucine	phosphate	sulfate	sulfone	nitrate	pyridine		carboxilic acid	metals
Lysine	phosphate	sulfate	sulfone	nitrate	pyridine		carboxilic acid	metals
Lysine	phosphate	sulfate	sulfone	nitrate	pyridine		carboxilic acid	metals
Maleic	phosphate	sulfate	sulfone	nitrate	pyridine		carboxilic acid	metals
Malic Acid	phosphate	sulfate	sulfone	nitrate	pyridine		Carboxylic Acid	metals
Malic Acid	phosphate	sulfate	sulfone	nitrate	pyridine		carboxilic acid	metals
Malonic	phosphate	sulfate	sulfone	nitrate	pyridine		carboxilic acid	metals
Mandelic Acid	phosphate	sulfate	sulfone	nitrate	pyridine		Carboxylic Acid	metals
Mandelic Acid	phosphate	sulfate	sulfone	nitrate	pyridine		carboxilic acid	metals
Methionine	phosphate	sulfate	sulfone	nitrate	pyridine		carboxilic acid	metals
Methionine	phosphate	sulfate	sulfone	nitrate	pyridine		carboxilic acid	metals
Methionine	chlorine		cyano	ester	amine	nitro	nitrate	bromine
Nicotinamide	*sulfonamide	*ketone	ether	triazole		ammonium	oxime	*chlorine
Nicotinamide	phosphate	sulfate	sulfone	nitrate	pyridine		Carboxylic Acid	metals
Nicotinic Acid	phosphate	sulfate	sulfone	nitrate	pyridine		Carboxylic Acid	metals
Nicotinic Acid	*sulfonamide	*ketone	ether	triazole		ammonium	oxime	*chlorine
Orotic acid	phosphate	sulfate	sulfone	nitrate	pyridine		carboxilic acid	
Orotic acid	phosphate	sulfate	sulfone	nitrate	pyridine		Carboxylic Acid	metals
Oxalic acid	phosphate	sulfate	sulfone	nitrate	pyridine		carboxilic acid	
Palmitic acid	phosphate	sulfate	sulfone	nitrate	pyridine		carboxilic acid	
Pamoic acid	phosphate	sulfate	sulfone	nitrate	pyridine		carboxilic acid	
Pamoic acid	phosphate	sulfate	sulfone	nitrate	pyridine		metals	aldehyde
Pamoic acid		alcohol		ester	ether	n-oxide	chlorine	fluorine



TABLE II

Co-crystal Former	aldehyde	ketone	peroxide	epoxide		heterocyclic-S	iodine
Ipriflavone	aldehyde	ester	ether	cyano	uran	bromine	chlorine
Ipriflavone	aldehyde	ester	ether	cyano	uran	bromine	chlorine
Isoleucine	aldehyde	ester	ether	cyano	uran	bromine	chlorine
Isoleucine	aldehyde	ester	ether	cyano	uran	bromine	chlorine
lactobionic acid	ester	ether	cyano		uran	chlorine	s-heterocyclic
Lactobionic acid	aldehyde	ketone	peroxide	epoxide		heterocyclic-S	iodine
Lauric acid	aldehyde	ester	ether	cyano	uran	bromine	chlorine
Leucine	aldehyde	ester	ether	cyano	uran	bromine	chlorine
Leucine	aldehyde	ester	ether	cyano	uran	bromine	chlorine
Lysine	aldehyde	ester	ether	cyano	uran	bromine	chlorine
Lysine	aldehyde	ester	ether	cyano	uran	bromine	chlorine
Maleic	aldehyde	ester	ether	cyano	uran	bromine	chlorine
Malic Acid	aldehyde	ester	ether	cyano	uran	bromine	chlorine
Malic Acid	aldehyde	ester	ether	cyano	uran	bromine	chlorine
Malonic	aldehyde	ester	ether	cyano	uran	bromine	chlorine
Mandelic Acid	aldehyde	ester	ether	cyano	uran	bromine	chlorine
Mandelic Acid	aldehyde	ester	ether	cyano	uran	bromine	chlorine
Methionine	aldehyde	ester	ether	cyano	uran	bromine	chlorine
Methionine	aldehyde	ester	ether	cyano	uran	bromine	chlorine
Methionine	aldehyde	ketone	peroxide	epoxide	Ag	heterocyclic-S	iodine
Nicotinamide		thiol	n-heterocyclic	thionedisulfide	pyrrolidindione	hydrazone	thiocyanate
Nicotinamide	aldehyde	ester	ether	cyano	uran	bromine	chlorine
Nicotinic Acid	aldehyde	ester	ether	cyano	uran	bromine	chlorine
Nicotinic Acid		thiol	n-heterocyclic	thionedisulfide	pyrrolidindione	hydrazone	thiocyanate
Orotic acid	aldehyde	ester	ether	cyano	uran	bromine	chlorine
Orotic acid	aldehyde	ester	ether	cyano	uran	bromine	chlorine
Oxalic acid	aldehyde	ester	ether	cyano	uran	bromine	chlorine
Palmitic acid	aldehyde	ester	ether	cyano	uran	bromine	chlorine
Pamoic acid	aldehyde	ester	ether	cyano	uran	bromine	chlorine
Pamoic acid	ester	ether	cyano		uran	chlorine	s-heterocyclic
Pamoic acid	bromine	iodine	ketone	sulfonic acid	sulfate	phosphonic acid	carboxylic acid

TABLE II

Co-crystal Former	ester	ether	carboxylic acid	sulfate	sulfone	phosphate ester	alcohol
Ipriflavone	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Ipriflavone	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Isoleucine	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Isoleucine	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Lactobionic acid	pyridine	cyano	n-heterocyclic	ketone	phosphate ester		fluorine
Lactobionic acid	ester	ether	carboxylic acid	sulfate	sulfone		alcohol
Lactobionic acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Lauric acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Leucine	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Leucine	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Lysine	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Lysine	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Maleic	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Malic Acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Malic Acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Malonic	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Mandelic Acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Mandelic Acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Methionine	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Methionine	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Methionine	ester	ether	carboxylic acid	sulfate	sulfone		alcohol
Nicotinamide	*bromine		hydroxamic acid	cyano	carboxamide	*sulfonic acid	*phosphoric acid
Nicotinamide	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Nicotinic Acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Nicotinic Acid	*bromine		hydroxamic acid	cyano	carboxamide	*sulfonic acid	*phosphoric acid
Nicotinic Acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Nicotinic Acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Orotic acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Orotic acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Oxalic acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Palmitic acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Pamoic acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	
Pamoic acid	pyridine	cyano	n-heterocyclic	ketone	phosphate ester		fluorine
Pamoic acid	nitro	sulfone	aniline				

## TABLE II

[illegible]

TABLE II

Co-crystal Former			
Ipriflavone			
Ipriflavone	iodine		
Isoleucine	iodine		
Isoleucine	iodine		
Lactobionic acid	iodine		
Lactobionic acid			
Lactobionic acid			
Lauric acid	iodine		
Leucine	iodine		
Leucine	iodine		
Lysine	iodine		
Lysine	iodine		
Maleic	iodine		
Malic Acid	iodine	epoxide	
Malic Acid	iodine		
Malonic	iodine		
Mandelic Acid	iodine	epoxide	
Mandelic Acid	iodine		
Methionine	iodine		
Methionine	iodine		
Methionine			
Nicotinamide			
Nicotinamide	iodine	epoxide	peroxide
Nicotinic Acid	iodine		
Nicotinic Acid			
Nicotinic Acid			
Orotic acid	iodine		
Orotic acid	iodine	epoxide	peroxide
Oxalic acid	iodine		
Palmitic acid	iodine		
Pamoic acid	iodine		
Pamoic acid			
Pamoic acid			

TABLE II

Co-crystal Former	Co-crystal Former Functional Group	Interacting Group						
		alcohol	ketone	thiol	amide	amine	aniline	phenol
Phenylalanine	Amine							
Phenylalanine	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol
Piperazine	Amine	alcohol	ketone	thiol	amide	amine	aniline	phenol
Procaine	Amine	alcohol	ketone	thiol	amide	amine	aniline	phenol
Procaine	Ketone	alcohol		thiol	amide	amine	aniline	phenol
Proline	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol
Proline	Amine	alcohol	ketone	thiol	amide	amine	aniline	phenol
p-Toluenesulfonic acid	Sulfonic Acid	pyridine	ketone	aldehyde	ether	ester	amide	Carboxylic Acid
Pyridoxamine	Alcohol	alcohol	ketone	thiol	amide	amine	aniline	phenol
Pyridoxamine	Amine	alcohol	ketone	thiol	amide	amine	aniline	phenol
Pyridoxamine	Pyridine	*alcohol		*	*amide	nitro	*amine	*Carboxylic Acid
Pyridoxine (4-Pyridoxic Acid)	Pyridine	*alcohol	pyridinium	*	*amide	nitro	*amine	*Carboxylic Acid
Pyridoxine (4-Pyridoxic Acid)	Alcohol	alcohol	ketone	thiol	amide	amine	aniline	phenol
Pyroglutamic acid	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol
Pyroglutamic acid	Lactam	alcohol	ketone	thiol	amide	amine	aniline	phenol
Quercetin	Ketone	alcohol		thiol	amide	amine	aniline	phenol
Quercetin	Phenol	amine	amide	sulfoxide	n	pyridine	cyano	aldehyde
Quercetin	Ether	aromatic-N	amide	amine	aromatic_s	Sp2 amine	sulfoxide	chlorate
Resveratrol	Ketone	alcohol		thiol	amide	amine	aniline	phenol
Resveratrol	Phenol	amine	amide	sulfoxide	n	pyridine	cyano	aldehyde
Saccharin	Amide	alcohol	ketone	thiol	amide	amine	aniline	phenol
Saccharin	Ketone	alcohol		thiol	amide	amine	aniline	phenol
Saccharin	Sulfoxide	pyridine	ketone	aldehyde	ether	ester	amide	Carboxylic Acid
Saccharin	Amine	alcohol	ketone	thiol	amide		aniline	phenol
Salicylic Acid	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol
Salicylic Acid	Alcohol	alcohol	ketone	thiol	amide	amine	aniline	phenol
Salicylic Acid, 4-amino	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol
Salicylic Acid, 4-amino	alcohol	alcohol	ketone	thiol	amide	amine	aniline	phenol
Salicylic Acid, 4-amino	Amine	alcohol	ketone	thiol	amide	amine	aniline	phenol



TABLE II

Co-crystal Former	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Phenylalanine	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Piperazine	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Procaine	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Procaine	phosphate	sulfate	sulfone	nitrate	pyridine	Carboxylic Acid	metals
Proline	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Proline	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
p-Toluenesulfonic acid	amine	metals	thioether		sulfate	alcohol	
Pyridoxamine	phosphate	sulfate	sulfone	nitrate	pyridine	Carboxylic Acid	metals
Pyridoxamine	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Pyridoxamine	*sulfonamide	*ketone	ether	triazole		oxime	*chlorine
Pyridoxamine	*sulfonamide	*ketone	ether	triazole		oxime	*chlorine
Pyridoxine	phosphate	sulfate	sulfone	nitrate	pyridine	Carboxylic Acid	metals
Pyridoxine	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Pyroglutamic acid	phosphate	sulfate	sulfone	nitrate	pyridine	Carboxylic Acid	metals
Quercetin	phosphate	sulfate	sulfone	nitrate	pyridine	Carboxylic Acid	metals
Quercetin	chlorine	alcohol		ester	ether	chlorine	fluorine
Quercetin	phosphate	sulfate	cyano	ester	amine	nitrate	bromine
Resveratrol	phosphate	sulfate	sulfone	nitrate	pyridine	Carboxylic Acid	metals
Resveratrol	phosphate	alcohol		ester	ether	chlorine	fluorine
Saccharin	phosphate	sulfate	sulfone	nitrate	pyridine	Carboxylic Acid	metals
Saccharin	phosphate	sulfate	sulfone	nitrate	pyridine	Carboxylic Acid	metals
Saccharin	amine	metals	thioether		sulfate	alcohol	
Saccharin	phosphate	sulfate	sulfone	nitrate	pyridine	Carboxylic Acid	metals
Salicylic Acid	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Salicylic Acid	phosphate	sulfate	sulfone	nitrate	pyridine	Carboxylic Acid	metals
Salicylic Acid, 4-amino	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Salicylic Acid, 4-amino	phosphate	sulfate	sulfone	nitrate	pyridine	metals	aldehyde
Salicylic Acid, 4-amino	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals

TABLE II

Co-crystal Former	aldehyde	ester	ether	cyano		furan	bromine	chlorine
Phenylalanine	aldehyde	ester	ether	cyano		furan	bromine	chlorine
Phenylalanine	aldehyde	ester	ether	cyano		furan	bromine	chlorine
Piperazine	aldehyde	ester	ether	cyano		furan	bromine	chlorine
Procaine	aldehyde	ester	ether	cyano		furan	bromine	chlorine
Procaine	aldehyde	ester	ether	cyano		furan	bromine	chlorine
Proline	aldehyde	ester	ether	cyano		furan	bromine	chlorine
Proline	aldehyde	ester	ether	cyano		furan	bromine	chlorine
p-Toluenesulfonic acid								
Pyridoxamine	aldehyde	ester	ether	cyano		furan	bromine	chlorine
Pyridoxamine	aldehyde	ester	ether	cyano		furan	bromine	chlorine
Pyridoxamine		thiol	n-heterocyclic ring	thionedisulfide		iodine	hydrazine	thiocyanate
Pyridoxine		thiol	n-heterocyclic ring	thionedisulfide	pyrrolidindione	iodine	hydrazine	thiocyanate
(4-Pyridox Acid)								
Pyridoxine	aldehyde	ester	ether	cyano		furan	bromine	chlorine
(4-Pyridox Acid)	aldehyde	ester	ether	cyano		furan	bromine	chlorine
Pyroglutamic acid	aldehyde	ester	ether	cyano		furan	bromine	chlorine
Pyroglutamic acid	aldehyde	ester	ether	cyano		furan	bromine	chlorine
Quercetin	bromine	iodine	ketone	sulfonic acid	sulfate	phosphate	phosphonic acid	carboxylic acid
Quercetin	aldehyde	ketone	peroxide	epoxide			heterocyclic-S	iodine
Quercetin	aldehyde	ester	ether	cyano		furan	bromine	chlorine
Resveratrol	bromine	iodine	ketone	sulfonic acid	sulfate	phosphate	phosphonic acid	carboxylic acid
Resveratrol	aldehyde	ester	ether	cyano		furan	bromine	chlorine
Saccharin	aldehyde	ester	ether	cyano		furan	bromine	chlorine
Saccharin								
Saccharin	aldehyde	ester	ether	cyano		furan	bromine	chlorine
Saccharin	aldehyde	ester	ether	cyano		furan	bromine	chlorine
Salicylic Acid	aldehyde	ester	ether	cyano		furan	bromine	chlorine
Salicylic Acid	aldehyde	ester	ether	cyano		furan	bromine	chlorine
Salicylic Acid, 4-amino	aldehyde	ester	ether	cyano		furan	bromine	chlorine
Salicylic Acid, 4-amino	ester	ether	cyano		furan	bromine	chlorine	s-heterocyclic
Salicylic Acid, 4-amino	aldehyde	ester	ether	cyano		furan	bromine	chlorine



TABLE II

Co-crystal Former	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Phenylalanine	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Phenylalanine	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Piperazine	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Procaine	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Procaine	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Proline	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Proline	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
p-Toluenesulfonic acid								
Pyridoxamine	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Pyridoxamine	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Pyridoxamine	N-oxide	ester	ether	fluorine	acetate	thione	dithiadiazocyclopentadienyl	
Pyridoxine	N-oxide	ester	ether	fluorine	acetate	thione	dithiadiazocyclopentadienyl	
(4-Pyridoxic Acid)								
Pyridoxine	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
(4-Pyridoxic Acid)	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Pyroglutamic acid	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Pyroglutamic acid	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Quercetin								
Quercetin		phosphphate	cyanamide					
Quercetin		phosphphate	cyanamide					
Resveratrol	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Resveratrol								
Saccharin	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Saccharin	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Saccharin								
Saccharin	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Saccharin	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Salicylic Acid	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Salicylic Acid	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Salicylic Acid, 4-amino	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea
Salicylic Acid, 4-amino	carbamate	imidazole	BF4					
Salicylic Acid, 4-amino	fluorine	carbamate	imidazole	BF4			N-SO2	thiourea

TABLE II

Co-crystal Former			
Phenylalanine	iodine		
Phenylalanine	iodine		
Piperazine	iodine		
Procaine	iodine		
Procaine	iodine		
Proline	iodine		
Proline	iodine		
p-Toluenesulfonic acid			
Pyridoxamine	iodine	epoxide	
Pyridoxamine	iodine		
Pyridoxamine			
Pyridoxine			
(4-Pyridoxic Acid)			
Pyridoxine	iodine	epoxide	
(4-Pyridoxic Acid)	iodine		
Pyroglutamic acid	iodine	epoxide	peroxide
Pyroglutamic acid	iodine		
Quercetin			
Quercetin			
Quercetin			
Resveratrol	iodine		
Resveratrol			
Saccharin	iodine	epoxide	peroxide
Saccharin	iodine		
Saccharin			
Saccharin	iodine		
Salicylic Acid	iodine		
Salicylic Acid	iodine	epoxide	
Salicylic Acid, 4-amino	iodine		
Salicylic Acid, 4-amino			
Salicylic Acid, 4-amino	iodine		



TABLE II

Co-crystal Former		Interacting Group							
Co-crystal Former	Functional Group	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Sebacic acid	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Serine	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Serine	Amine	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Serine	Alcohol	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Stearic acid	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Succinic Acid	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Tartaric Acid	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Threonine	Amine	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Threonine	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Threonine	alcohol	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Tris	Amine	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Tris	Alcohol	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Tryptophan	Amine	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Tryptophan	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Tryptophan	Indole	*alcohol	pyridinium	*	*amide	nitro	*amine	*carboxilic acid	
Tyrosine	Amine	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Tyrosine	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Tyrosine	Alcohol	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Urea	Ketone	alcohol		thiol	amide	amine	aniline	phenol	
Urea	Amine	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Urea	Amide	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Valine	Amine	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Valine	Carboxylic Acid	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Vitamin K5	Amine	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Vitamin K5	Alcohol	alcohol	ketone	thiol	amide	amine	aniline	phenol	
Xylitol	Alcohol	alcohol	ketone	thiol	amide	amine	aniline	phenol	

TABLE II

Co-crystal Former	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Sebacic acid	phosphate	sulfate	sulfone	nitrate	pyridine	Carboxylic Acid	metals
Serine	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Serine	phosphate	sulfate	sulfone	nitrate	pyridine	Carboxylic Acid	metals
Serine	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Stearic acid	phosphate	sulfate	sulfone	nitrate	pyridine	Carboxylic Acid	metals
Succinic Acid	phosphate	sulfate	sulfone	nitrate	pyridine	Carboxylic Acid	metals
Tartaric Acid	phosphate	sulfate	sulfone	nitrate	pyridine	Carboxylic Acid	metals
Threonine	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Threonine	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Threonine	phosphate	sulfate	sulfone	nitrate	pyridine	Carboxylic Acid	metals
Tris	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Tris	phosphate	sulfate	sulfone	nitrate	pyridine	Carboxylic Acid	metals
Tryptophan	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Tryptophan	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Tryptophan	*sulfonamide	*ketone	ether	triazole	ammonium	oxime	*chlorine
Tyrosine	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Tyrosine	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Tyrosine	phosphate	sulfate	sulfone	nitrate	pyridine	Carboxylic Acid	metals
Urea	phosphate	sulfate	sulfone	nitrate	pyridine	Carboxylic Acid	metals
Urea	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Urea	phosphate	sulfate	sulfone	nitrate	pyridine	Carboxylic Acid	metals
Valine	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Valine	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Vitamin K5	phosphate	sulfate	sulfone	nitrate	pyridine	carboxylic acid	metals
Vitamin K5	phosphate	sulfate	sulfone	nitrate	pyridine	Carboxylic Acid	metals
Xylitol	phosphate	sulfate	sulfone	nitrate	pyridine	Carboxylic Acid	metals

TABLE II

Co-crystal Former	aldehyde	ester	ether	cyano		pyrrolidindione	iodine	bromine	chlorine
Sebacic acid	aldehyde	ester	ether	cyano				bromine	chlorine
Serine	aldehyde	ester	ether	cyano				bromine	chlorine
Serine	aldehyde	ester	ether	cyano				bromine	chlorine
Serine	aldehyde	ester	ether	cyano				bromine	chlorine
Stearic acid	aldehyde	ester	ether	cyano				bromine	chlorine
Succinic Acid	aldehyde	ester	ether	cyano				bromine	chlorine
Tartaric Acid	aldehyde	ester	ether	cyano				bromine	chlorine
Threonine	aldehyde	ester	ether	cyano				bromine	chlorine
Threonine	aldehyde	ester	ether	cyano				bromine	chlorine
Threonine	aldehyde	ester	ether	cyano				bromine	chlorine
Tris	aldehyde	ester	ether	cyano				bromine	chlorine
Tris	aldehyde	ester	ether	cyano				bromine	chlorine
Tryptophan	aldehyde	ester	ether	cyano				bromine	chlorine
Tryptophan	aldehyde	ester	ether	cyano				bromine	chlorine
Tryptophan		thiol	n-heterocyclic ring	thionedisulfide			iodine	hydrazine	thiocyanate
Tyrosine	aldehyde	ester	ether	cyano			iodine	bromine	chlorine
Tyrosine	aldehyde	ester	ether	cyano			iodine	bromine	chlorine
Tyrosine	aldehyde	ester	ether	cyano			iodine	bromine	chlorine
Urea	aldehyde	ester	ether	cyano			iodine	bromine	chlorine
Urea	aldehyde	ester	ether	cyano			iodine	bromine	chlorine
Urea	aldehyde	ester	ether	cyano			iodine	bromine	chlorine
Valine	aldehyde	ester	ether	cyano			iodine	bromine	chlorine
Valine	aldehyde	ester	ether	cyano			iodine	bromine	chlorine
Vitamin K5	aldehyde	ester	ether	cyano			iodine	bromine	chlorine
Vitamin K5	aldehyde	ester	ether	cyano			iodine	bromine	chlorine
Xylitol	aldehyde	ester	ether	cyano			iodine	bromine	chlorine

TABLE II

Co-crystal Former	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Sebacic acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Serine	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Serine	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Serine	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Stearic acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Succinic Acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Tartaric Acid	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Threonine	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Threonine	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Threonine	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Tris	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Tris	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Tryptophan	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Tryptophan	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Tryptophan	*bromine		hydroxamic acid	cyano	carboxamide	*sulfonic acid
Tryptosine	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Tyrosine	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Tyrosine	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Urea	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Urea	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Urea	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Valine	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Valine	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Vitamin K5	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Vitamin K5	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester
Xylitol	s-heterocyclic	pyridine	cyano	n-heterocyclic	ketone	phosphate ester

TABLE II

Co-crystal Former	fluorine	carbamate	imidazole	BF4		N-SO2	thiourea
Sebacic acid	fluorine	carbamate	imidazole	BF4		N-SO2	thiourea
Serine	fluorine	carbamate	imidazole	BF4		N-SO2	thiourea
Serine	fluorine	carbamate	imidazole	BF4		N-SO2	thiourea
Serine	fluorine	carbamate	imidazole	BF4		N-SO2	thiourea
Stearic acid	fluorine	carbamate	imidazole	BF4		N-SO2	thiourea
Succinic Acid	fluorine	carbamate	imidazole	BF4		N-SO2	thiourea
Tartaric Acid	fluorine	carbamate	imidazole	BF4		N-SO2	thiourea
Threonine	fluorine	carbamate	imidazole	BF4		N-SO2	thiourea
Threonine	fluorine	carbamate	imidazole	BF4		N-SO2	thiourea
Threonine	fluorine	carbamate	imidazole	BF4		N-SO2	thiourea
Tris	fluorine	carbamate	imidazole	BF4		N-SO2	thiourea
Tris	fluorine	carbamate	imidazole	BF4		N-SO2	thiourea
Tryptophan	fluorine	carbamate	imidazole	BF4		N-SO2	thiourea
Tryptophan	fluorine	carbamate	imidazole	BF4		N-SO2	thiourea
Tryptophan	N-oxide	ester	ether	fluorine	thione	dithiadiazocyclopentadienyl	
Tyrosine	fluorine	carbamate	imidazole	BF4		N-SO2	thiourea
Tyrosine	fluorine	carbamate	imidazole	BF4		N-SO2	thiourea
Tyrosine	fluorine	carbamate	imidazole	BF4		N-SO2	thiourea
Urea	fluorine	carbamate	imidazole	BF4		N-SO2	thiourea
Urea	fluorine	carbamate	imidazole	BF4		N-SO2	thiourea
Urea	fluorine	carbamate	imidazole	BF4		N-SO2	thiourea
Valine	fluorine	carbamate	imidazole	BF4		N-SO2	thiourea
Valine	fluorine	carbamate	imidazole	BF4		N-SO2	thiourea
Vitamin K5	fluorine	carbamate	imidazole	BF4		N-SO2	thiourea
Vitamin K5	fluorine	carbamate	imidazole	BF4		N-SO2	thiourea
Xylitol	fluorine	carbamate	imidazole	BF4		N-SO2	thiourea



TABLE II

Co-crystal Former			
Sebacic acid	iodine		
Serine	iodine		
Serine	iodine		
Serine	iodine	epoxide	
Stearic acid	iodine		
Succinic Acid	iodine		
Tartaric Acid	iodine		
Threonine	iodine		
Threonine	iodine		
Threonine	iodine	epoxide	
Tris	iodine		
Tris	iodine	epoxide	
Tryptophan	iodine		
Tryptophan	iodine		
Tryptophan			
Tyrosine	iodine		
Tyrosine	iodine		
Tyrosine	iodine	epoxide	
Urea	iodine		
Urea	iodine		
Urea	iodine	epoxide	peroxide
Valine	iodine		
Valine	iodine		
Vitamin K5	iodine		
Vitamin K5	iodine	epoxide	
Xylitol	iodine	epoxide	

TABLE III

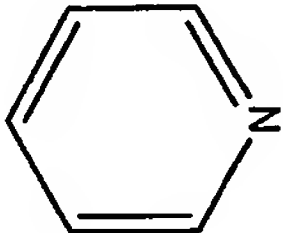
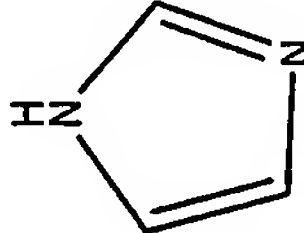
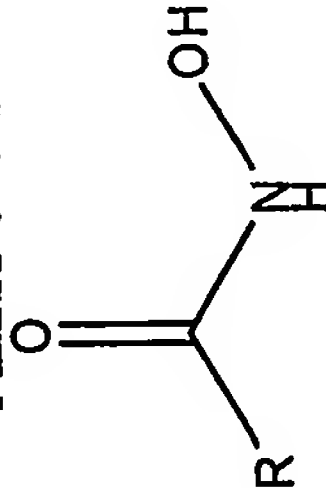

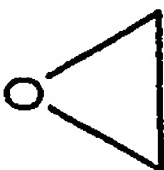
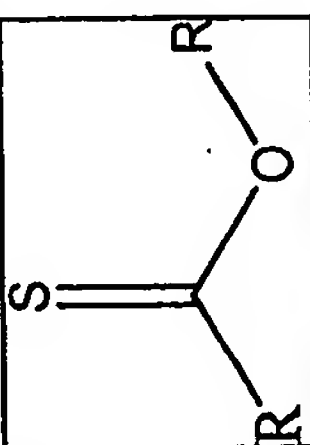
Functional Group	Functional Group Structure	Interacting Group							
pyridine		*alcohol	pyridinium	*amide	nitro		*amine	*carboxilic acid	
imidazole		imidazole	chlorine	acetamide	carboxylate		thione	nitro	
Hydroxamic acid		hydroxamic acid	alcohol	phosphinic ester	alkane		pyridine	amide	
peroxide		ester	peroxide	amide	ether		alkane	N-heterocycle	
epoxide		alkane	bromine	alcohol	ester		epoxide	amide	
thioester		aromatic	thioester	alkane	sulfamide		hydroxy	bromine	

TABLE III

Functional Group	*sulfonamide	*ketone	ether	triazole	alkane	ammonium	oxime	*chlorine	alkyne
pyridine									
imidazole	cyanamide	ketone	cyano	carboxylic acid	alcohol	alkane	thiol	amine	phosphinic acid hemihydrate
Hydroxamic acid	sulfonamide	carboxylate	phosphine	amine	aromatic				
peroxide	aromatic	alcohol	pyrimidinedione	aniline	thiazole	peroxy acid	ketone	carboxylic acid	azide
epoxide	alkene	hydrazone	aromatic	thioether	ketone	aldehyde	chlorine	carboxylic acid	alkyne
thioester	iodine	amine	cyano	thioketone	amide		chlorine	nitro	

TABLE III

Functional Group	thiol	n-heterocyclic ring	thionedisulfide	pyrrolidindione	iodine	hydrazone	thiocyanate	*bromine	aromatic
pyridine									
imidazole	chlorine	sulfonyl	sulfoxide	amide	fluorine	sulfonate ester			
Hydroxamic acid									
peroxide	phosphine oxide	sulfonamide	aniline						
epoxide		ammonium	fluorine	nitro	amine	cyano			
thioester									

TABLE III

Functional Group	hydroxamic acid	cyano	carboxamide	*sulfonic acid	*phosphoric acid	N-oxide	ester	ether	fluorine	acetate	thione
pyridine											
imidazole											
Hydroxamic acid											
peroxide											
epoxide											
thioester											



TABLE III

Functional Group						
pyridine	dithiadiazocyclopentadienyl					
imidazole						
Hydroxamic acid						
peroxide						
epoxide						
thioester						

TABLE III

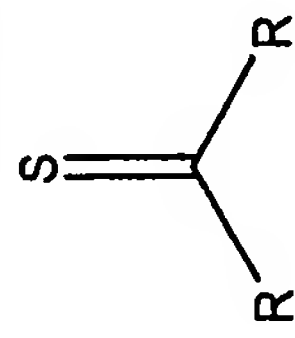

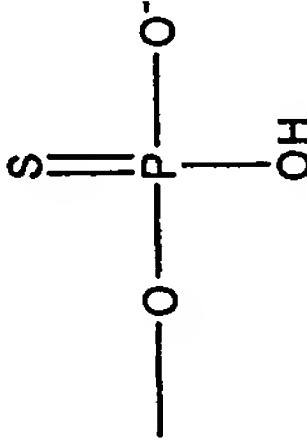
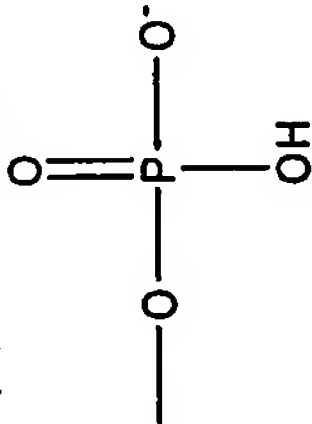
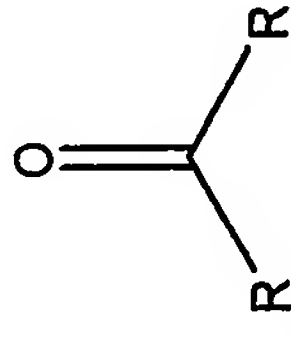
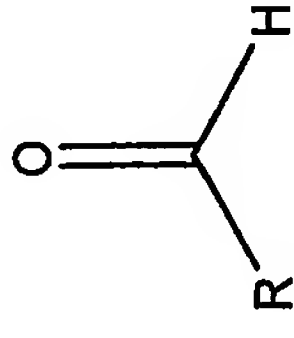

Functional Group	Functional Group Structure	Interacting Group						
thioketone		alkane	thioketone	ketone	SULFAMIDE	AMINE	thiol	
nitrate ester								
Thiophosphate ester-O		aromatic	amide	alkane	chlorine	nitrate ester	bromine	
Phosphate ester		amine	imidazole	cyclic amide				
		aromatic	alcohol	phosphate ester	aromatic N-ring	pyridine	aniline	
Ketone		alcohol	ketone	thiol	amide	amine	aniline	
Aldehyde		alcohol	ketone	thiol	amide	amine	aniline	
Thiol		carboxylic acid	sodium	aldehyde	ketone	aromatic-N	cadmium	

TABLE III

Functional Group	sulfoxide	oxo	chlorine	bromine	AROMATIC	alkene	sulfone	iodine	AZOXY
thioketone									
nitrate ester	alcohol	ether	acetate						
Thiophosphate ester-O									
Phosphate ester	amine		sodium	potassium	lithium	carboxylic acid	amide	alkane	
Ketone	phenol	phosphate	sulfate	sulfone	nitrate	pyridine	aromatic	carboxylic acid	metals
Aldehyde	phenol	phosphate	sulfate	sulfone	nitrate	pyridine	aromatic	carboxylic acid	metals
Thiol	alkane	arsenic	chlorine	alcohol	potassium	Ru	aromatic	Rb	Sb

TABLE III

Functional Group	potassium epoxide	n-oxide	cyano	iron	cobalt	amine	sulfate	
thioketone								
nitrate ester								
Thiophosphate ester-O								
Phosphate ester								
Ketone	aldehyde	ether	cyano		furan	bromine	chlorine	s-heterocyclic
Aldehyde	aldehyde	ether	cyano		furan	bromine	chlorine	s-heterocyclic
Thiol								





TABLE III

Functional Group							
thio ketone							
nitrate ester							
Thiophosphate ester-O							
Phosphate ester							
Ketone					N-SO <sub>2</sub>	thiourea	iodine
Aldehyde					N-SO <sub>2</sub>	thiourea	iodine
Thiol							epoxide

TABLE III

Functional Group	Functional Group Structure	Interacting Group							
Alcohol	$R-OH$	alcohol	ketone	thiol	amide	amine	amine	aniline	
Thioether	$R-S-R$	aromatic-N	amide	amine	aromatic_s	Sp2 amine	sulfoxide		
Ether	$R-O-R$	aromatic-N	amide	amine	aromatic_s	Sp2 amine	sulfoxide		
Cyanamide	$N-C\equiv N$	cyano	amine	potassium	aromatic-N	bromine	sodium		
Thiocyanate	$S-C\equiv N$	aromatic-S	ester	ether					
sP2 amine	$R_2C=NH$	thioether	ether	metals	MoOCl4	BF4	bromine		
Amine primary	$R-NH_2$	alcohol	ketone	thiol	amide	amine	aniline		

TABLE III

Functional Group	phenol	phosphate	sulfate	sulfone	nitrate	pyridine	aromatic	carboxylic acid	metals
Alcohol									
Thioether	chlorate	chlorine	alkyne	cyano	ester	amine	nitro	nitrate	bromine
Ether	chlorate	chlorine	alkyne	cyano	ester	amine	nitro	nitrate	bromine
Cyanamide	imidazole	ether	n-heterocyclic	alcohol	cesium	Ag			
Thiocyanate									
sp2 amine	chlorine		Sp2 amine	sulfate	Osmium				
Amine primary	phenol	phosphate	sulfate	sulfone	nitrate	pyridine	aromatic	carboxylic acid	metals

TABLE III

Functional Group	aldehyde	ester	ether	cyano		furan	bromine	chlorine	s-heterocyclic
Alcohol									
Thioether	aldehyde	ketone	peroxide	epoxide	Ag	Se	heterocyclic-S	iodine	ester
Ether	aldehyde	ketone	peroxide	epoxide	Ag	Se	heterocyclic-S	iodine	ester
Cyanamide									
Thiocyanate									
sp <sup>2</sup> amine									
Amine primary	aldehyde	ester	ether	cyano		furan	bromine	chlorine	s-heterocyclic

TABLE III

Functional Group	pyridine	cyano	n-heterocyclic	ketone	phosphate ester	alcohol	fluorine	carbamate	imidazole	BF4	alkane
Alcohol											
Thioether	ether	carboxylic acid	sulfate	sulfone	alkane	alcohol		phosphate			
Ether	ether	carboxylic acid	sulfate	sulfone	alkane	alcohol		phosphate	cyanamide		
Cyanamide											
Thiocyanate											
sp2 amine											
Amine primary	pyridine	cyano	n-heterocyclic	ketone	phosphate ester		fluorine	carbamate	imidazole	BF4	alkane



TABLE III

Functional Group						
Alcohol	aromatic	N-SO <sub>2</sub>	thiourea	iodine	epoxide	
Thioether						
Ether						
Cyanamide						
Thiocyanate						
sp <sup>2</sup> amine						
Amine primary	aromatic	N-SO <sub>2</sub>	thiourea	iodine		

TABLE III

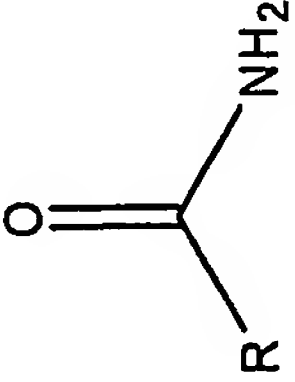
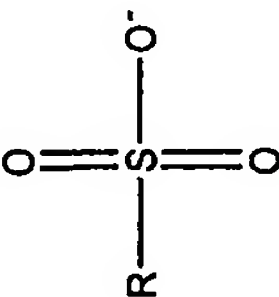
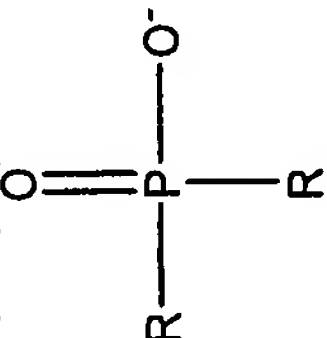
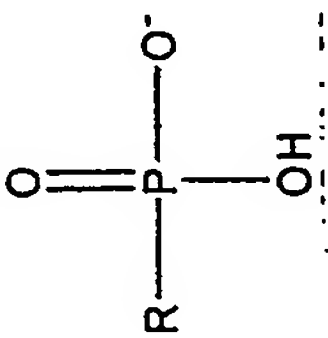
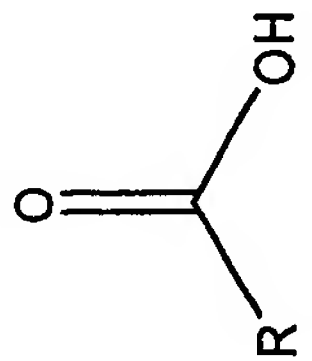
Functional Group	Functional Group Structure	Interacting Group							
Amine secondary	$R_2-NH$	alcohol	ketone	thiol	amide	amine	aniline		
Amine tertiary	$R_3-N$	alcohol	ketone	thiol	amide	amine	aniline		
Amide		alcohol	ketone	thiol	amide	amine	aniline		
Sulfonic acid		pyridine	ketone	aldehyde	ether	ester	amide		
Phosphinic acid		alkane	potassium	lithium	n-heterocyclic	oxime	amide		
Phosphonic acid		alkane	potassium	lithium	n-heterocyclic	oxime	amide		
Carboxylic acid		alcohol	ketone	thiol	amide	amine	aniline		

TABLE III

Functional Group	phenol	phosphate	sulfate	sulfone	nitrate	pyridine	aromatic	carboxylic acid	metals
Amine secondary									
Amine tertiary									
Amide									
Sulfonic acid									
Phosphonic acid									
Phosphonic acid									
Carboxylic acid									



TABLE III

Functional Group	pyridine	cyano	n-heterocyclic	ketone	phosphate ester		fluorine	carbamate	imidazole	BF4	alkane
Amine secondary											
Amine tertiary	pyridine	cyano	n-heterocyclic	ketone	phosphate ester		fluorine	carbamate	imidazole	BF4	alkane
Amide	pyridine	cyano	n-heterocyclic	ketone	phosphate ester		fluorine	carbamate	imidazole	BF4	alkane
Sulfonic acid											
Phosphinic acid											
Phosphonic acid											
Carboxylic acid	pyridine	cyano	n-heterocyclic	ketone	phosphate ester		fluorine	carbamate	imidazole	BF4	alkane



TABLE III

Functional Group							
Amine secondary	aromatic	N-SO <sub>2</sub>	thiourea	iodine			
Amine tertiary	aromatic	N-SO <sub>2</sub>	thiourea	iodine			
Amide	aromatic	N-SO <sub>2</sub>	thiourea	iodine	epoxide	peroxide	
Sulfonic acid							
Phosphinic acid							
Phosphonic acid							
Carboxylic acid	aromatic	N-SO <sub>2</sub>	thiourea	iodine			

TABLE III

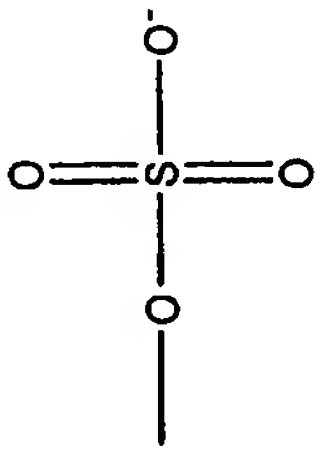
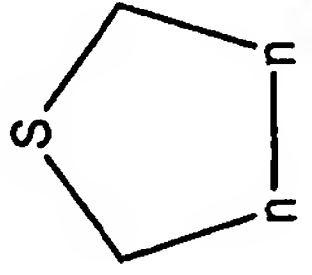
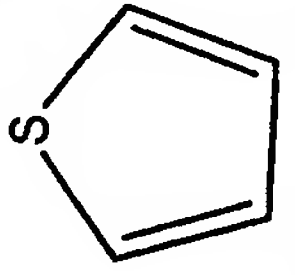
Functional Group	Functional Group Structure	Interacting Group									
Sulfate ester		pyridine	ketone	aldehyde	ether	ester	amide				
Oxime	$C=N-OH$	alcohol	alkane	amine	amide	ether	ester				
Nitrile	$-C\equiv N$	metal	ketone	phenol	alcohol						
Diazo	$RH_2C-N=N-CH_2R$										
Nitro	$NO_2$	pyridine	ketone	aldehyde	ether	ester	amide				
S-heterocyclic ring		alcohol	thioketone	thioether	s-heterocyclic	ketone	aromatic				
		chlorine	fluorine	amide	ketone	NO	SO				

TABLE III

Functional Group									
Sulfate ester	carboxylic acid	amine	metals	thioether	sulfate	alcohol			
Oxime	pyridine	n-aromatic	chlorate	chlorine	Sp2-N	diazo	thioketone	cyano	n-oxide
Nitrile	amine	aniline	bromine	amide	alkane	carboxylic acid	chlorine	n-heterocyclic	aromatic
Diazo									
Nitro	carboxylic acid	amine	metals	thioether	sulfate	alcohol			
S-heterocyclic ring	alkene	amine	chlorine	BF4	sulfate	ester	NO	ether	amide
Thiophene									
	CO								

## TABLE III

[illegible]

## TABLE III

Functional Group							
Sulfate ester							
Oxime							
Nitrile							
Diazo							
Nitro							
S-heterocyclic ring							
Thiophene							



TABLE III

Functional Group							
Sulfate ester							
Oxime							
Nitrile							
Diazo							
Nitro							
S-heterocyclic ring							
Thiophene							

TABLE III

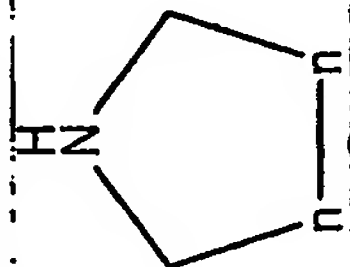
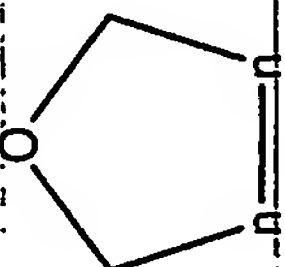
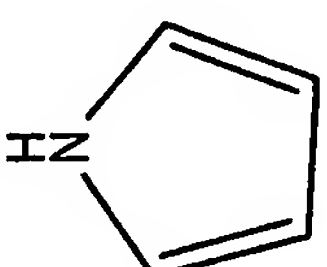
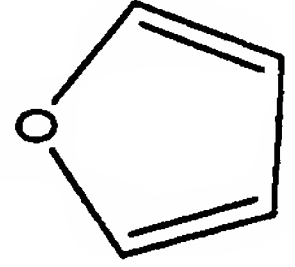
Functional Group	Functional Group Structure	Interacting Group						
N-heterocyclic ring		alcohol	thioketone	thioether	s-heterocyclic	ketone	aromatic	
O-heterocyclic ring		alcohol	thioketone	thioether	s-heterocyclic	ketone	aromatic	
Pyrrole		chlorine	fluorine	amide	ketone	NO	SO	
Furan		s-heterocyclic						

TABLE III

Functional Group										
N-heterocyclic ring	alkene	amine	chlorine	BF <sub>4</sub>	sulfate	ester	NO	ether	amide	
O-heterocyclic ring	alkene	amine	chlorine	BF <sub>4</sub>	sulfate	ester	NO	ether	amide	
Pyrrole	CO	imidazole	pyridine	n-aromatic	aldehyde	carboxylic acid	sulfate	chlorine	bromine	
Furan										

[illegible]





TABLE III

Functional Group					
N-heterocyclic ring					
O-heterocyclic ring					
Pyrrole					
Furan					

Table IV

API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
(-)-amlodipine	3,5-Pyridinedicarboxylic acid, 2-((2-aminoethoxy)methyl)-4-(2-chlorophenyl)-1,4-dihydro-6-methyl-, 3-ethyl-5-methyl ester, (S)- [CAS]	103129-82-4	WO 9310779	Antihypertensive, other	Hypertension, general
(-)-halofenate	(-)-Benzenecetic acid, 4-chloro-Alpha-[3-(trifluoromethyl)-phenoxy]-, 2-(acetylamino)ethyl ester		US 6262118	Antidiabetic	Diabetes, Type II
(R)-salbutamol	1,3-Benzenedimethanol, Alpha1-(((1,1-dimithylethyl)amino)methyl)-4-hydroxy-[CAS]			Formulation, modified-release, <=24hr	Asthma
(R)-salbutamol	1,3-Benzenedimethanol, Alpha1-(((1,1-dimethyl)ethyl)amino)methyl)-4-hydroxy-[CAS]	34391-04-3	US 5547994	Antiasthma	Asthma
(R,R)-formoterol	Formamide, N-(2-hydroxy-5-(1-hydroxy-2-((2-(4-methoxyphenyl)-1-methylethyl)amino)ethyl)phenyl)- (R-(R*,R*))- [CAS]	67346-49-0	US 5795564	Antiasthma	Asthma
(S)-doxazosin	(S)-1-(4-amino-6,7-dimethoxy-2-quinazolinyl)-4-(1,4-benzodioxan-2-yl)carbonyl)piperazine	70918-18-2	WO 9409785	Prostate disorders	Benign prostatic hyperplasia
(S)-fluoxetine	Benzenepropanamide, N-methyl-Gamma-(4-(trifluoromethyl)phenoxy)- (S)			Antimigraine	Migraine
(S)-oxybutynin	Benzenecetic acid, Alpha-cyclohexyl-Alpha-hydroxy-, 4-(diethylamino)-2-butynyl ester, (S)- [CAS]	119618-22-3		Urological	Incontinence
1,2-Naphthoquinone 17 $\alpha$ -		524-42-5			
Hydroxyprogesterone		68-96-2			
17-Methyltestosterone		58-18-4			
195mPt-cisplatin	Platinum-195m, diamminedichloro, (SP-4-2)-		US 6074626	Anticancer, alkylating	Cancer, liver
1 $\alpha$ -Hydroxycholecalciferol		41294-56-8			

Table IV

API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
1-Naphthyl Salicylate		550-97-0			
1-Naphthylamine-4-sulfonic Acid		84-86-6			
1-Theobromineacetic Acid		5614-56-2			
2,4,6-Tribromo-m-cresol		4619-74-3			
2,6-Diamino-2'-butyloxy-3,5'-azopyridine		617-19-6			
21-Acetoxy pregnenolone		566-78-9			
2-Amino-4-picoline		695-34-1			
2-Aminothiazole		96-50-4			
2-ethoxybenzoic acid	2-Ethoxybenzoic acid		DE 5134001	Analgesic, NSAID	Pain, general
2-Naphthol		135-19-3			
2-Naphthyl Benzoate		93-44-7			
2-Naphthyl Lactate		93-43-6			
2-Naphthyl Salicylate		613-78-5			
2-p-Sulfanilylanilinoethanol		80-02-4			
2-Thiouracil 3',3'',5',5''-Tetrabromophenolphthalein		141-90-2			
		76-62-0			
3-Amino-4-hydroxybutyric Acid		589-44-6			
3-Bromo-d-camphor		76-29-9			
3-Hydroxycamphor		10373-81-6			
3-O-Lauroylpyridoxol Diacetate		1562-13-6			
3-Pentadecylcatechol		492-89-7			

Table IV

API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
3-Quinuclidinol		1619-34-7			
4,4'-Oxydi-2-butanol		821-33-0			
4,4'-Sulfinyldianiline		119-59-5			
4-Amino-3-hydroxybutyric Acid		352-21-6			
4-Amino-3-phenylbutyric Acid		1078-21-3			
4-aminosalicylic acid	Benzoic acid, 4-amino-2-hydroxy- [CAS]	65-49-6		GI inflammatory/bowel disorders	Inflammatory bowel disease
4-Chloro-m-cresol		59-50-7			
4-Hexylresorcinol		136-77-6			
4-Salicyloylmorpholine		3202-84-4			
5'-Nitro-2'-propoxycetanilide		553-20-8			
5-aminolevulinic acid,	Pentanoic acid, 5-amino-4-oxo- [CAS]	106-60-5		Dermatological	Keratosis
5-azacitidine	1,3,5-Triazin-2(1H)-one, 4-amino-1- $\beta$ -D-ribofuranosyl- [CAS]	320-67-2		Anticancer, antimetabolite	Myelodysplastic syndrome
5-Bromosalicylhydroxamic Acid		5798-94-7			
5F-DF-203	2-(4-Amino-3-methylphenyl)-6-hydroxybenzothiazole			Anticancer, other	Cancer, breast
5-FU	2,4(1H,3H)-Pyrimidinedione, 5-fluoro [CAS]	51-21-8		Formulation, parenteral, targeted	Cancer, general
5-HT3 antagonists			US 6037360	Male sexual dysfunction	Premature ejaculation
6-Azauridine		54-25-1			
6-Mercaptopurine		50-44-2			
8-Hydroxyquinoline		148-24-3			
9-Aminocamptothecin		91421-43-1			
A-151892	N-[2-(2,2,2-Trifluoro-1-hydroxy-1-trifluoromethyl-ethyl)-naphthalen-1-yl] amide			Urological	Overactive bladder

Table IV

API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
$\alpha_1$ -Antitrypsin		9041-92-3			
A-5021	6H-Purin-6-one, 2-amino-9-(((1S,2R)-1,2-bis(hydroxymethyl)cyclopropyl)methyl)-1,9-dihydro- [CAS]	145512-85-2		Antiviral, other	Infection, varicella zoster virus
abacavir	2-Cyclopentene-1-methanol, 4-(2-amino-6-(cyclopropylamino)-9H-purin-9-yl)-, (1S-cis)- [CAS]	136470-78-5 188062-50-2	EP 434450	Antiviral, anti-HIV	Infection, HIV/AIDS
abaperidone	7-[3-[4-(6-Fluoro-1,2-benzisoxazol-3-yl)piperidin-1-yl]propoxy]-3-(hydroxymethyl)chromen-4-one	183849-43-6	WO 9632389	Neuroleptic	Schizophrenia
abarelix	D-Alaninamide, N-acetyl-3-(2-naphthalenyl)-D-alanyl-4-chloro-D-phenylalanyl-3-(3-pyridinyl)-D-alanyl-L-seryl-N-methyl-L-tyrosyl-D-asparaginy-L-leucyl-N6-(1-methylethyl)-L-lysyl-L-prolyl- [CAS]	183552-38-7	US 5843902	Anticancer, hormonal	Cancer, prostate
Abciximab		143653-53-6			
Abecarnil		111841-85-1			
abetimus		169147-32-4	US 5552391	Immunosuppressant	Lupus erythematosus, systemic
abiraterone	Androsta-5,16-dien-3-ol, 17-(3-pyridinyl)-, acetate (ester), (3S)- [CAS]	154229-18-2	GB 2265624	Anticancer, hormonal	Cancer, prostate
$\alpha$ -Bisabolol		515-69-5			
ABLC	Amphotericin B [CAS]	1397-89-3 30652-87-0		Formulation, conjugate, carbohydrate	Infection, Candida, general
ABT-751	Benzenesulfonamide, N-[2-[(4-hydroxyphenyl)amino]-3-pyridinyl]-4-methoxy- [CAS]	141430-65-1	EP 472053	Anticancer, other	Cancer, general
AC-5216	N-benzyl-N-ethyl-2-(7,8-dihydro-7-methyl-8-oxo-2-phenyl-9H-purin-9-yl)acetamide				
Acadesine		2627-69-2		Anxiolytic	Anxiety, general
acamprostate	1-Propanesulfonic acid, 3-(acetylamino)- [CAS]	77337-76-9	GB 2051789	Dependence treatment	Addiction, alcohol
Acamprosate		77337-73-6			



Table IV

API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Acarbose	7H-Purine-7-acetic acid, 1,2,3,6-tetrahydro-1,3-dimethyl-2,6-dioxo-, compd. with trans-4-[[[2-amino-3,5-dibromophenyl)methyl]amino]cyclohexanol (1:1) [CAS]	56180-94-0			
acebrophylline		96989-76-3	DE 3425007	Antilasthma	Asthma
acebutolol	Butanamide, N-[3-acetyl-4-[2-hydroxy-3-[[1-methylethyl)amino]propoxy]phenyl]-, (+/-)- [CAS]	34381-68-5 37517-30-9	US 3726919	Antihypertensive, adrenergic	
<b>Acecaïnide</b>		32795-44-1			
<b>Acecarbromal</b>		77-66-7			
acedofenac	Benzeneacetic acid, 2-[(2,6-dichlorophenyl)amino]-, carboxymethyl ester [CAS]	89796-99-6	EP 119932	Anti-inflammatory	Pain, musculoskeletal
<b>Acedapson</b>		77-46-3			
<b>Acediasulfone</b>		80-03-5			
<b>Acefylline</b>		652-37-9			
<b>Aceglutamide</b>		2490-97-3			
aceglutamide	Aluminum, pentakis(N2-acetyl-L-glutaminato)tetrahydroxytri- [CAS]	12607-92-0	DE 2127176	Antiulcer	Ulcer, GI, general
acemetacin	1H-Indole-3-acetic acid, 1-(4-chlorobenzoyl)-5-methoxy-2-methyl-, carboxymethyl ester [CAS]	53164-05-9	US 3910952	Anti-inflammatory	
<b>Acenocoumarol</b>		152-72-7			
<b>Acetal</b>		105-57-7			
<b>Acetamidoeugenol</b>		305-13-5			
<b>Acetaminophen</b>		103-90-2			
<b>Acetaminosalol</b>		118-57-0			
<b>Acetanilide</b>		103-84-4			
<b>Acetarson</b>		97-44-9			
<b>Acetazolamide</b>		59-66-5			
<b>Acetiamine</b>		299-89-8			
<b>Acetohexamide</b>		968-81-0			
<b>Acetohydroxamic Acid</b>		546-88-3			
<b>Acetophenazine</b>		2751-68-0			

Table IV

API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Acetophenone		98-86-2			
Acetosulfone		128-12-1			
acetoxolone	Olean-12-en-30-oic acid, 3 $\beta$ -hydroxy-11-oxo-acetate, aluminium salt [CAS]	29728-34-5 6277-14-1	US 3764618	Antiulcer	
Acetrizoate		129-63-5			
Acetyl					
Sulfamethoxypyrazine		3590-05-4			
Acetylcarnitine		14992-62-2			
Acetylcholine		66-23-9			
Acetylcholine		60-31-1			
Acetylcysteine		616-91-1			
Acetylleucine		149-90-6			
Monoethanolamine					
Acetylpheneturide		13402-08-9			
acetylsalicylic acid	Benzoic acid, 2-(acetyloxy)- [CAS]	50-78-2 75-6	530	Formulation, optimized, microencapsulate	Pain, general
$\alpha$ -Chloralose		15879-93-3			
aciclovir	6H-Purin-6-one, 2-amino-1,9-dihydro-9-[(2-hydroxyethoxy)methyl]- [CAS]	59277-89-3			Infection, herpes simplex virus
Acifran		72420-38-3			
acipimox	Pyrazinecarboxylic acid, 5-methyl-, 4-oxide [CAS]	51037-30-0	GB 1361967	Hypolipaeic/Antiatherosclerosis	Hyperlipidaemia, general
acitazanolast	Acetic acid, oxo[[3-(1H-tetrazol-5-yl)phenyl]amino]- [CAS]	114607-46-4	EP 256507	Ophthalmological	Conjunctivitis
acitretin	2,4,6,8-Nonatetraenoic acid, 9-(4-methoxy-2,3,6-trimethylphenyl)-3,7-dimethyl-, (all-E) [CAS]	55079-83-9			Psoriasis
aclarubicin		57576-44-0 75443-99-1	GB 1468401 US 3988315	Antipsoriasis Anticancer, antibiotic	
Aclatonium Napadisilate		55077-30-0			
Aconitine		302-27-2			
Acranil®		1684-42-0			
Acriflavine		8048-52-0			
Acrisorcin		7527-91-5			

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API Generic Name	API Chemical Name	CAS No.	Patent		Example of Therapeutic Use	Example of Indication
			Reference			
activastine	2-Propenoic acid, 3-[6-[1-(4-methylphenyl)-3-(1-pyrrolidinyl)-1-propenyl]-2-pyridinyl]-, (E,E)- [CAS]	87848-99-5	EP	85959	Antipruritic/inflamm, allergic	Rhinitis, allergic, general
	Benzenemethanol, Alpha-[1-(methylamino)ethyl]-, hydrochloride, [S-(R*,R*)]-, mixtwith 2-Propenoic acid, 3-[6-[1-(4-methylphenyl)-3-(1-pyrrolidinyl)-1-propenyl]-2-pyridinyl]-, (E,E)-				Antiallergic, non-asthma	Rhinitis, allergic, seasonal
activastine + pseudoephedrine	3,3-dimethyl-1-propylamide HCl monocarboxamide actagardine				Peptide antibiotic	Infection, general
actagardine derivative		18699-02-0				
Actarit		9002-60-2				
ACTH		59277-89-3				
Acyclovir						
adapalene	2-Naphthalenecarboxylic acid, 6-(4-methoxy-3-tricyclo[3.3.1.1 <sup>3,7</sup> dec-1-ylphenyl]- [CAS]	106685-40-9	EP	199636	Antiacne	Acne
ADCON-L	GL 402 [CAS]	137802-74-5			Formulation, other	Fibrosis, epidural
Adefovir		106941-25-7				
	Propanoic acid, 2,2-dimethyl-, (((2-(6-amino-9H-purin-9-yl)ethoxy)methyl)phosphinyldene)bis(oxy methylene)ester- [CAS]	142340-99-6	EP	205826	Antiviral, other	Infection, hepatitis-B virus
adefovir dipivoxil	6-Amino-9-β-D-ribofuranosyl-9H-purine [CAS]	58-61-7			Imaging agent	Diagnosis, coronary
Adenoscan		56-65-5				
Adenosine Triphosphate						
ADEPT		156079-88-8			Immunoconjugate, other	Cancer, colorectal
Adinazolam		37115-32-5				
Adiphenine		64-95-9				
ADL-10-0101			WO	9732857	Analgesic, other	Pain, general
Adrafinil		63547-13-7				
Adrenalone		99-45-6				
Adrenochrome		54-06-8				
	Benzo(f)thieno(2,3-c)quinoline-9,10-diol, 4,5,5a,6,7,11b-hexahydro-2-propyl-, diacetate (ester), hydrochloride (5aR-trans)- [CAS]	166591-11-3 171752-56-0	US	5597832	Dependence treatment	Addiction, cocaine
adrogolide						

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
AEOL-10150			US 6103714	Neuroprotective	Unspecified
AET		56-10-0			
$\alpha$ -Ethylbenzyl Alcohol		93-54-9			
AF-2259	Benzeneacetic acid, Alpha-methyl-4-(2-methylpropyl)-, 2-methoxyphenyl ester [CAS]	66332-77-2	DE 2726435	Anti-inflammatory	Inflammation, general
Afloqualone		56287-74-2			
AG-041R	1H-Indole-3-acetamide, 1-(2,2-diethoxyethyl)-2,3-dihydro-N-(4-methylphenyl)-3-(((4-methylphenyl)amino)carbonyl)amino)-2-oxo-, (3R)- [CAS]	199800-49-2	WO 9419322	Alimentary/Metabolic, other	Unspecified
AG-2037	N-(5-{2-(2-amino-4(3H)-oxo-5,6,7,8-tetrahydropyrido[2,3-d]pyrimidin-6-yl)ethyl}-4-methylthieno-2-yl)glutamic acid			Anticancer, antimetabolite	Cancer, general
$\alpha$ -Glucose-1-phosphate		59-56-3			
AGN-194310	Benzoic acid, 4-((4-(4-ethylphenyl)-2,2-dimethyl-2H-1-benzothiopyran-6-yl)ethynyl)- [CAS]	229961-45-9	WO 9709297	Dermatological	Psoriasis
agomelatine	Acetamide, N-(2-(7-methoxy-1-naphthalenyl)ethyl)- [CAS]	138112-76-2	EP 447285	Antidepressant	Sleep disorder, general
Ahistan		518-61-6			
AHL-157			US 5411972	Hypolipaeic/Antiatherosclerosis	Atherosclerosis
AIT-034	9H-Purine-9-propanamide, 1,6-dihydro-6-oxo-N-(3-(2-oxo-1-pyrrolidinyl)propyl)- [CAS]	138117-48-3	US 5447939	Cognition enhancer	Dementia, senile, general
AIT-202	N-[2-(5-Hydroxy-1H-indol-3-yl)ethyl]-3-(6-oxo-6,9-dihydro-1H-purin-9-yl)propionamide		WO 9957120	Antidepressant	Unspecified

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
AJ-9677	Acetic acid, ((3-((2R)-2-(((2R)-2-(3-chlorophenyl)-2-hydroxyethyl)amino)propyl)-1H-indol-7-yl)oxy)- [CAS]	244081-42-3		Antidiabetic	Diabetes, Type II
AJG-049			WO 9733885	Gastroprokinetic	Motility dysfunction, GI, general
Ajmaline		12/07/4360			
Alacepril		74258-86-9			
albaconazole	4(3H)-Quinazolinone, 7-chloro-3-((1R,2R)-2-(2,4-difluorophenyl)-2-hydroxy-1-methyl-3-(1H-1,2,4-triazol-1-yl)propyl)- [CAS]	187949-02-6	WO 9705131	Antifungal	Infection, Candida, general
albendazole	Carbamic acid, [5-(propylthio)-1H-benzimidazol-2-yl]-, methyl ester [CAS]	54029-12-8 54965-21-8	GB 1464326	Anthelmintic	Infection, helminth, general
Albuterol		18559-94-9			
Albutoin		830-89-7			
alclofenac	Benzeneacetic acid, 3-chloro-4-(2-propenyloxy)- [CAS]	22131-79-9	GB 1174535	Anti-Inflammatory	
alcometasone	Pregna-1,4-diene-3,20-dione, 7-chloro-11-hydroxy-16-methyl-17,21-bis(1-oxopropoxy)-, (7Alpha,11Beta,16Alpha)- [CAS]	66734-13-2 67452-97-5	US 4124707	Antipruritic/inflamm, allergic	Inflammation, dermal
Alcuronium		23214-96-2			
Aldioxa		5579-81-7			
Aldol		107-89-1			
Aldosterone		52-39-1			
alendronate	Phosphonic acid, (4-amino-1-hydroxybutylidene)bis-[CAS]	121268-17-5 129318-43-0	GB 2118042	Osteoporosis treatment	Osteoporosis
Alendronic Acid		66376-36-1			
Alexidine		22573-93-9			
alfacalcidol	9,10-Secosteroid-5,7,10(19)-triene-1,3-diol, (1Alpha,3Beta,5Z,7E)- [CAS]	41294-56-8		Osteoporosis treatment	Osteodystrophy
Alfadolone		23930-37-2			
Alfaxalone		23930-19-0			
Alfentanil		71195-58-9			
alfimeprase		259074-76-5		Fibrinolytic	Peripheral vascular disease



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alfuzosin	2-Furancarboxamide, N-[3-[(4-amino-6,7-dimethoxy-2-quinazolinyl)methylamino]propyl]tetrahydr	81403-68-1	GB 2013679	Prostate disorders	Benign prostatic hyperplasia
	o- [CAS]	81403-80-7			
alfuzosin	2-Furancarboxamide, N-[3-[(4-amino-6,7-dimethoxy-2-quinazolinyl)methylamino]propyl]tetrahydr	81403-68-1		Formulation, modified-release, other	Benign prostatic hyperplasia
	o- [CAS]	81403-80-7			
Algestone		595-77-7			
Algestone Acetophenide		24356-94-3			
Algin		9005-38-3			
Alglucerase		143003-46-7			
Alibendol		26750-81-2			
aliskiren	(2S,4S,5S,7S)-5-Amino-N-(2-carbamoyl-2-methylpropyl)-4-hydroxy-2-isopropyl-7-[4-methoxy-3-(3-methoxypropoxy)benzyl]-8-methylnonanamide			Antihypertensive, renin system	Hypertension, general
		173334-57-1			
alitretinoin	9-cis retinoic acid				
		03/08/5300		Antipruritic/inflam, allergic	Eczema, general
alizapride	1H-Benzotriazole-5-carboxamide, 6-methoxy-N-[[1-(2-propenyl)-2-pyrrolidinyl]methyl]- [CAS]	59338-93-1	GB 1475234	Antiemetic	Nausea and vomiting, general
Alkannin		517-88-4			
Alkofanone		7527-94-8			
Allantoin		97-59-6			
Allobarbitol		52-43-7			
Allopurinol		315-30-0			
Allyl Isothiocyanate		57-06-7			
Allylestrenol		432-60-0			
almagate	Magnesium, [carbonato(2-heptahydroxy(aluminum)tri-, dihydrate [CAS]	66827-12-1	US 4447417	Antacid/Antiflatulent	
		72526-11-5			
alminoprofen	Benzenecacetic acid, Alpha-methyl-4-[(2-methyl-2-propenyl)amino]- [CAS]	39718-89-3	US 3957850	Analgesic, NSAID	

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almitrine	1,3,5-Triazine-2,4-diamine, 6-[4-bis(4-fluorophenyl)methyl]-1-piperazyl]-N,N'-di-2-propenyl-, dimethanesulfonate [CAS]	27469-53-0 29608-49-9	GB 1256513	Respiratory	Bronchitis, chronic
almotriptan	Pyrrolidine, 1-(((3-(2-(dimethylamino)ethyl)-1H-indol-5-yl)methyl)sulfonyl)- [CAS]	154323-57-6 481-72-1	WO 9402460	Antimigraine	Migraine
<b>Aloe-Emodin</b>					
<b>Aloin</b>		5133-19-7 122852-42-0 122852-69-1 132414-02-9			
alosetron	2,3,4,5-Tetrahydro-5-methyl-2-[(5-methyl-1H-imidazol-4-yl)methyl]-1H-pyrido[4,3-b]indol-1-one [CAS]		EP 306323	GI inflammatory/bowel disorders	Iritable bowel syndrome
alovudine	Thymidine, 3'-deoxy-3'-fluoro- [CAS]	25526-93-6 9014-67-9	EP 470355	Antiviral, anti-HIV	Infection, HIV/AIDS
<b>Aloxiprin</b>					
Alpha-1 protease inhibitor			US 5780014	Formulation, inhalable, topical	Emphysema, alpha-1 antitrypsin deficiency
Alpha-dihydroergocryptine	Ergocryptine, 9,10-dihydro-methanesulfonate (salt)- [CAS]	29261-93-6 77-20-3		Formulation, other	Parkinson's disease
<b>Alphaprodine</b>					
<b>Alpidem</b>		82626-01-5			
<b>Alpiropride</b>		81982-32-3			
alprazolam	4H-[1,2,4]Triazolo[4,3-a][1,4]benzodiazepine, 8-chloro-1-methyl-6-phenyl- [CAS]	28981-97-7 13655-52-2	US 3987052	Anxiolytic	Anxiety, general
<b>Alprenolol</b>					
alsactide	Alpha1-17-Corticotropin, 1-β-alanine-17-[N-(4-aminobutyl)-L-lysineamide]- [CAS]	34765-96-3	US 3749704	ACTH	Arthritis, rheumatoid
ALT-711	Thiazolidium, 4,5-dimethyl-3-(2-oxo-2-phenylethyl)-, bromide [CAS]	181069-80-7 5588-16-9	WO 9622095	Symptomatic antidiabetic	Hypertension, general
<b>Althiazide</b>					
altinicline	Pyridine, 3-ethynyl-5-(2S)-1-methyl-2-pyrrolidinyl)- [CAS]	179120-92-4	US 5594011	Antiparkinsonian	Parkinson's disease
altretamine	1,3,5-Triazine-2,4,6-triamine, N,N,N',N'',N'''-hexamethyl- [CAS]	645-05-6 7446-70-0 7784-13-6	US 3424752	Anticancer, alkylating	Cancer, ovarian
aluminium chloride hexahydrate	Aluminium chloride, hexahydrate			Dermatological	Hyperhidrosis

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Aluminon		569-58-4			
Aluminum Acetate Solution		8006-13-1			
Aluminum Chlorate		15477-33-5			
Aluminum Hydroxide		1327-41-9			
Aluminum Potassium Sulfate		10043-67-1			
Aluminum Sodium Sulfate		10102-71-3			
alusulf	Aluminum hydroxide sulfate (Al <sub>7</sub> (OH) <sub>17</sub> (SO <sub>4</sub> ) <sub>2</sub> ), dodecahydrate [CAS]	61115-28-4	DE 2510663	Urological	Hyperphosphataemia
Alverine		150-59-4			
	Glycine, N-[(2S)-2-[[[(3R,4R)-4-(3-hydroxyphenyl)-3,4-dimethyl-1-piperidinyl]methyl]-1-oxo-3-phenylpropyl]-[CAS]	156053-89-3	EP 657428	GI inflammatory/bowel disorders	Ileus
alvimopan					
	4H-1-Benzopyran-4-one, 2-(2-chlorophenyl)-5,7-dihydroxy-8-(3-hydroxy-1-methyl-4-piperidinyl)-, cis-(-) [CAS]	131740-09-5 146426-40-6		Anticancer, other	Cancer, renal
alvocidib			WO 9506638	Antimigraine	Migraine
ALX-0646					
AM-24	2,4,6-Triiodophenol	609-23-4		GI inflammatory/bowel disorders	Crohn's disease
AM-36	1-Piperazineethanol, 4-[[[3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl]methyl]-Alpha-(4-chlorophenyl)- [CAS]	199467-52-2		Neuroprotective	Unspecified
AM-477	2-Methoxyoestradiol			Antiasthma	Asthma
Amantadine		768-94-5			
	1-Decanaminium, N,N-dimethyl-N-[2-[[[tricyclo[3.3.1.1 <sup>3,7</sup> ]dec-1-ylcarbonyl]oxy]ethyl]-, bromide [CAS]	58158-77-3	US 4288609	Antifungal	Infection, general
amantanium		539-21-9			
Ambazone		115-79-7			
Ambenonium					

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
ambrisentan	(+)-(2S)-2-[(4,6-dimethylpyrimidin-2-yl)oxy]-3-methoxy-3,3-diphenylpropanoic acid	177036-94-1		Vasodilator, peripheral	Heart failure
ambroxol	Cyclohexanol, 4-[[[(2-amino-3,5-dibromophenyl)methyl]amino]-, trans- [CAS]	18683-91-5 23828-92-4	GB 1178034	COPD treatment	Bronchitis, chronic
Ambucaine		119-29-9			
Ambuphylline		5634-34-4			
Ambuside		3754-19-6			
Ambutonium Bromide		115-51-5			
amcinonide	Pregna-1,4-diene-3,20-dione, 21-(acetyloxy)-16,17-[cyclopentylidenebis(oxy)]-9-fluoro-11-hydroxy-, (11 $\beta$ ,16 $\alpha$ )- [CAS]	51022-69-6	DE 2437847	Antipsoriasis	
AMD-3100	1,4,8,11-Tetraazacyclotetradecane, 1,11-(1,4-phenylenebis(methylene))bis-, octahydrochloride [CAS]	155148-31-5	US 5612478	Haematological	Chemotherapy-induced injury, bone marrow, leucopenia
Amdinocillin		32887-01-7			
Amdinocillin Pivoxil		32886-97-8			
amdoxovir	1,3-Dioxolane-2-methanol, 4-(2,6-diamino-9H-purin-9-yl)- (2R-cis)- [CAS]	145514-04-1	EP 656778	Antiviral, anti-HIV	Infection, HIV/AIDS
amelubant	Carbamic acid, ((4-((3-((4-(1-(4-hydroxyphenyl)-1-methylethyl)phenoxy)methyl)phenyl)methoxy)phenyl)iminomethyl)- ethyl ester [CAS]	346735-24-8	DE 10000907	COPD treatment	Chronic obstructive pulmonary disease
Americaine	Benzenemethanaminium, N,N-dimethyl-N-[2-[4-(1,1,3,3-tetramethylbutyl)phenoxy]ethoxy]ethyl]-, chloride, mixt. with ethyl 4-aminobenzoate [CAS]	129128-13-8		Formulation, inhalable, other	Pain, general
Amezinium		30578-37-1			
Amfenac		51579-82-9			
Amidephrine		3354-67-4			
Amidinomycin		3572-60-9			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
amifostine	2-[[3-aminopropyl]amino]-, dihydrogen phosphate (ester)- [CAS]	20537-88-6 63717-27-1	EP 131500	Radio/chemoprotective	Chemotherapy-induced injury, renal
amiglumide	Pentanoic acid, 5-(dipentylamino)-4-[(2-naphthalenylcarbonyl)amino]-5-oxo- (R)- [CAS]	119363-62-1	WO 8805774	GI inflammatory/bowel disorders	Pancreatitis
amikacin		37517-28-5 39831-55-5		Formulation, optimized, microencapsulate	Infection, general
<b>Amiloride</b>		2609-46-3			
<b>Aminacrine</b>		90-45-9			
amineptine	Heptanoic acid, 7-[(10,11-dihydro-5H-dibenzo[a,d]cyclohepten-5-yl)amino]- [CAS]	30272-08-3 57574-09-1	US 3758528	Antidepressant	
<b>Aminitrozole</b>		140-40-9			
<b>Amino Acid Preparations</b>					
<b>Aminocaproic Acid</b>					
aminogluthethimide	2,6-Piperidinedione, 3-(4-aminophenyl)-3-ethyl- [CAS]	125-84-8 79-17-4	US 3944671	Anticancer, hormonal	Cancer, breast
<b>Aminoguanidine</b>					
<b>Aminohippurate</b>		642-44-4			
<b>Aminometradine</b>		60-46-8			
<b>Aminopentamide</b>					
aminophylline	1H-Purine-2,6-dione, 3,7-dihydro-1,3-dimethyl-, compd. with 1,2-ethanediamine (2:1) [CAS]	317-34-0		Formulation, modified-release, other	Asthma
<b>Aminopromazine</b>		58-37-7			
<b>Aminopyrine</b>		58-15-1			
<b>Aminoquinuride</b>		3811-56-1			
<b>Aminorex</b>		2207-50-3			
amlodarone	Methanone, (2-butyl-3-benzofuranyl)[4-[2-(diethylamino)ethoxy]-3,5-diodophenyl]- [CAS]	1951-25-3 19774-82-4	US 3248401	Antiarrhythmic	Arrhythmia, general
<b>Amiphenazole</b>		490-55-1			
<b>Amiprilose</b>		56824-20-5			



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amisulpride	Benzamide, 4-amino-N-[(1-ethyl-2-pyrrolidinyl)methyl]-5-(ethylsulfonyl)-2-methoxy- [CAS]	71675-85-9	US 4401822	Neuroleptic	Schizophrenia
<b>Amitriptyline</b>		50-48-6			
amitriptyline+ketamine	1-Propanamine, 3-(10, 11-dihydro-5H-dibenzo[a,d]cyclohepten-5-ylidene)-N,N-dimethyl + cyclohexanone, 2-(2-chlorophenyl)-2-(methylamino)			Formulation, fixed-dose combinations	Pain, neuropathic
<b>Amitriptylinoxide</b>		4317-14-0			
amlexanox	5H-[1]Benzopyrano[2,3-b]pyridine-3-carboxylic acid, 2-amino-7-(1-methylethyl)-5-oxo- [CAS]	68302-57-8	US 4299963	Antiasthma	Asthma
amlodipine	3,5-Pyridinedicarboxylic acid, 2-[(2-aminoethoxy)methyl]-4-(2-chlorophenyl)-1,4-dihydro-6-methyl-, 3-ethyl 5-methyl ester [CAS]	111470-99-6 88150-42-9 88150-47-4	EP 89167	Antianginal	Hypertension, general
<b>Ammoniacum</b>		03/07/9000			
<b>Ammonium Benzoate</b>		1863-63-4			
<b>Ammonium Mandelate</b>		530-31-4			
<b>Ammonium Salicylate</b>		528-94-9			
<b>Ammonium Valerate</b>		42739-38-8			
<b>Amobarbital</b>		57-43-2			
<b>Amocarzine</b>		36590-19-9			
<b>Amodiaquin</b>		86-42-0			
amorolfine	Morpholine, 4-[3-[4-(1,1-dimethylpropyl)phenyl]-2-methylpropyl]-2,6-dimethyl-, cis- [CAS]	78613-35-1 78613-38-4	EP 24334	Antifungal	Infection, fungal, general
<b>Amoscanate</b>		26328-53-0			
amosulalol	Benzenesulfonamide, 5-[1-hydroxy-2-[(2-methoxyphenoxy)ethyl]amino]ethyl]-2-methyl-, (+/-)- [CAS]	70958-86-0 85320-68-9	EP 136103	Antihypertensive, adrenergic	Hypertension, general
<b>Amotriphene</b>		5585-64-8			
amoxapine	Dibenz[b,f][1,4]oxazepine, 2-chloro-11-(1-piperazinyl)- [CAS]	14028-44-5	GB 1192812	Antidepressant	Depression, general

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amoxicillin	4-Thia-1-azobicyclo[3.2.0]heptane-2-carboxylic acid, 6-[[amino(4-hydroxyphenyl)acetyl]amino]-3,3-dimethyl-7-oxo-, [2S-[2Alpha,5Alpha,6beta(S*)]] [CAS]	26787-78-0 61336-70-7		Formulation, modified-release, other	Infection, general
amoxicillin+potassium clavulan		74469-00-4	GB 1508977	Formulation, fixed-dose combinations	Infection, respiratory tract, general
AMPAlex	Piperidine, 1-(6-quinoxaliny(carbonyl)-[CAS]	154235-83-3	US 5650409	Psychostimulant	Attention deficit disorder
Amphetamine		300-62-9			
Amphetaminil		17590-01-1			
amphotericin B	Amphotericin B compd. with (3beta)-cholest-5-en-3-yl hydrogen sulfate (1:1) [CAS]	120895-52-5 1397-89-3	US 4822777	Formulation, optimized, liposomes	Infection, general
ampicillin	4-Thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid, 6-[[aminophenylacetyl]amino]-3,3-dimethyl-7-oxo-, [2S-[2Alpha,5Alpha,6beta(S*)]]	69-53-4 7177-48-2		Formulation, fixed-dose combinations	Infection, general
Ampiroxicam		99464-64-9			
Ampligen		38640-92-5			
amprenavir	Carbamic acid, (3-(((4-aminophenyl)sulfonyl)(2-methylpropyl)amino)-2-hydroxy-1-(phenylmethyl)propyl)-, tetrahydro-3-furanyl ester, (3S-(3R*(1R*,2S*)))- [CAS]	161814-49-9	US 5783701	Antiviral, anti-HIV	Infection, HIV/AIDS
amrinone	[3,4'-Bipyridin]-6(1H)-one, 5-amino- [CAS]	60719-84-8 75898-90-7	US 4004012	Cardiostimulant	
amrubicin	5,12-Naphthacenedione, 9-acetyl-9-amino-7-[(2-deoxy-beta-D-erythro-pentopyranosyl)oxy]-7,8,9,10-tetrahydro-6,11-dihydroxy-, hydrochloride, (7S-cis)-[CAS]	92395-36-3	EP 107486	Anticancer, antibiotic	Cancer, lung, non-small cell
amsacrine	Methanesulfonamide, N-[4-(9-acridinylamino)-3-methoxyphenyl]- [CAS]	51264-14-3		Anticancer, other	Cancer, leukaemia, acute lymphocytic

Table IV

API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
amtolmetin guacil	Glycine, N-[[1-methyl-5-(4-methylbenzoyl)-1H-pyrrol-2-yl]acetyl]-, 2-methoxyphenyl ester [CAS]	87344-06-7	GB 2115417	Analgesic, NSAID	Arthritis, rheumatoid
<b>Amylocaine</b>		532-59-2			
AN-152			WO 9719954	Anticancer, antibiotic	Cancer, prostate
anabolic steroids			WO 9848812	Cardiovascular	Heart failure
<b>Anagestone</b>		2740-52-5			
anagrelide	Imidazo[2,1-b]quinazolin-2(3H)-one, 6,7-dichloro-1,5-dihydro-, monohydrochloride [CAS]	58579-51-4 68475-42-3	GB 1418822	Haematological	Thrombocytosis
anastrozole	1,3-Benzenediacetonitrile, Alpha,Alpha,Alpha'-tetramethyl-5-(1H-1,2,4-triazol-1-ylmethyl)- [CAS]	120511-73-1	EP 296749	Anticancer, hormonal	Cancer, breast
<b>Anazolene</b>		3861-73-2			
<b>Ancitabine</b>		31698-14-3			
<b>Ancrod</b>		9046-56-4			
andolast	N-4'-[5-Tetrazolyl]-phenyl-4-(5-tetrazolyl)-benzamide	132640-22-3	EP 460083	Antiasthma	Asthma
<b>Androisoxazole</b>		360-66-7			
<b>Androstenediol</b>		521-17-5			
anecortave	21-(Acetyloxy)-17-hydroxypregna-4,9(11)-diene-3,20-dione	7753-60-8		Ophthalmological	Macular degeneration
<b>Anethole</b>		4180-23-8; 104-46-1 (unspecified)			
<b>Anethole Trithione</b>		532-11-6			
Angiogenix			US 6417205	Cardiovascular	Cardiomyopathy, ischaemic
<b>Angiotensin</b>		1407-47-2			
anhydrovinblastine	Vincalukoblastine, 3',4'-didehydro-4'-deoxy- [CAS]	38390-45-3	US 6011041	Anticancer, other	Cancer, general
anidulafungin	Echinocandin B, 1-((4R,5R)-4,5-dihydroxy-N2-((4"-pentylloxy)(1,1':4',1"-terphenyl)-4-yl)carbonyl)-L-ornithine)- [CAS]	166663-25-8	US 6384013	Antifungal	Infection, Candida, general

Table IV

API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Anileridine		144-14-9			
Aniracetam		72432-10-1			
Anisindione		117-37-3			
Anisomycin		22862-76-6			
Anisotropine		80-50-2			
Methylbromide anistreplase	Anistreplase [CAS]	81669-57-0	EP 28489	Fibrinolytic	Infarction, myocardial
Antazoline		91-75-8			
Anthiolimine		305-97-5			
Anthralin		1143-38-0			
Anthramycin		4803-27-4			
Anthrarobin		577-33-3			
anthrax inhibitor			US 6436933	Anti-Infective, other	Infection, anthrax
antiangiogenic dendrimers			US 6426067	Anticancer, other	Cancer, general
	L-Ascorbic acid, mixt with 2-(diethylamino)ethyl 4-aminobenzoate monohydrochloride, disodium hydrogen phosphate, potassium benzoate and zinc sulfate (1:1) [CAS]	186646-39-9	WO 9640038	Anabolic	Cachexia
Anticort			US 5898036	Antidepressant	Depression, general
antidepressants			US 6303302	Antifungal	Infection, fungal, general
anti-invasins					
Antimony Potassium Tartrate		28300-74-5			
Antimony Sodium Thioglycollate		539-54-8			
Antimony Thioglycollamide		6533-78-4			
	19-Norpregna-4,9-dien-3-one,(acetylphenyl)-20,20,21,21,21-pentafluoro-17-hydroxy-(11 $\beta$ ,17 $\alpha$ ) [CAS]	211254-73-8	DE 19706061	Anticancer, hormonal	Cancer, breast
Antiprogesterin		60-80-0			
Antipyrine		520-07-0			
Antipyrine Salicylate		9000-94-6			
antithrombin III	Antithrombin, III [CAS]	90170-80-2		Blood fraction	Antithrombin III deficiency

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anxiolytics			US 5756538	Anxiolytic	Anxiety, general
AP-521	N-Piperonyl-2-amino-1,2,3,4-tetrahydrobenzo(b)thieno(2,3-c)pyridine-3-carbamide	151227-08-6	WO 9321189	Anxiolytic	Anxiety, general
AP-5280			US 5965118	Anticancer, alkylating	Cancer, general
Apalcillin		63469-19-2			
apaziquone	1H-Indole-4,7-dione, 5-(1-aziridinyl)-3-(hydroxymethyl)-2-(3-hydroxy-1-propenyl)-1-methyl-, (E)- [CAS]	114560-48-4	WO 8706227	Anticancer, alkylating	Cancer, breast
Apazone		13539-59-8			
$\alpha$ -Phenylbutyramide		90-26-6			
Apocodeine		641-36-1			
apomine	Phosphonic acid, (2-(3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl)ethylidene)bis- tetrakis(1-methylethyl) ester [CAS]	126411-13-0		Anticancer, other	Cancer, prostate
apomorphine	4H-Dibenzo[de,g]quinoline-10,11-diol, 5,6a,7-tetrahydro-6-methyl-, hydrochloride	314-19-2 58-00-4		Formulation, transmucosal, nasal	Impotence
apraclonidine	1,4-Benzenediamine, 2,6-dichloro-N1-(4,5-dihydro-1H-imidazol-2-yl)- [CAS]	66711-21-5 73218-79-8	US 4517199	Antiglaucoma	Glaucoma
aprepitant	3H-1,2,4-Triazol-3-one, 5-[[[(2R,3S)-2-[(1R)-1-[3,5-bis(trifluoromethyl)phenyl]ethoxy]-3-(4-fluorophenyl)-4-morpholinyl]methyl]-1,2-dihydro- [CAS]	170729-80-3	US 5719147	Antiemetic	Chemotherapy-induced nausea and vomiting
aprimidine	1,3-Propanediamine, N-(2,3-dihydro-1H-inden-2-yl)-N',N'-diethyl-N-phenyl-[CAS]	33237-74-0 37640-71-4	GB 1321424	Antiarrhythmic	
Aprobarbital		77-02-1			
Apronalide		528-92-7			
Aprotinin		9087-70-1			
Aptiganel		137159-92-3			
AQ4N	9,10-Anthracenedione, 1,4-bis((2-(dimethylamino)ethyl)amino)-5,8-dihydroxy-[CAS]	136470-65-0	US 5132327	Anticancer, other	Cancer, general
Aquavan			US 6204257	Anaesthetic, injectable	Anaesthesia

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
AR-116081	(R)-N-[5-methyl-8-(4-methylpiperazin-1-yl)-1,2,3,4-tetrahydro-2-naphthyl]-4-morpholinobenzamide		US 6107324	Neuroleptic	Unspecified
AR-A2		506-32-1		Anxiolytic	Anxiety, general
Arachidonic Acid					
aranidipine	3,5-Pyridinedicarboxylic acid, 1,4-dihydro-2,6-dimethyl-4-(2-nitrophenyl)-, methyl 2-oxopropyl ester- [CAS]	86780-90-7	GB 2111978	Antihypertensive, other	Hypertension, general
arbakacin	D-Streptamine, O-3-amino-3-deoxy-Alpha-D-glucopyranosyl-(1-6)-O-[2,6-diamino-2,3,4,6-tetra-deoxy-Alpha-D-erythrohexopyranosyl-(1-4)]-N1-(4-amino-2-hydroxy-1-oxobutyl)-2-deoxy-, (S)- [CAS]	51025-85-5 75282-65-4	US 4001208	Aminoglycoside antibiotic	Infection, general
Arbidol	1H-indole-3-carboxylic acid, 6-bromo-4-((dimethylamino)methyl)-5-hydroxy-1-methyl-2-((phenylthio)methyl)-, ethylester, monohydrochloride [CAS]	131707-23-8	WO 9008135	Immunostimulant, other	Infection, influenza virus
arbutamine	1,2-Benzenediol, 4-[1-hydroxy-2-[[4-(4-hydroxyphenyl)butylamino]ethyl]-, (R)-[CAS]	128470-16-6	WO 9220324	Diagnostic	Diagnosis, coronary
Arcitumomab	Heparin [CAS]	154361-48-5			
ardeparin	1,2,5,6-Tetrahydro-1-methyl-3-pyridine carboxylic acid methyl ester	9005-49-6		Anticoagulant	Thrombosis, venous
arecoline				Formulation, transdermal, patch	Alzheimer's disease
argatroban	2-Piperidinecarboxylic acid, 1-[5-[(aminiminomethyl)amino]-1-oxo-2-[[[(1,2,3,4-tetrahydro-3-methyl-8-quinolyl)sulfonyl]amino]pentyl]-4-methyl- [CAS]	74863-84-6	EP 8746	Anticoagulant	Thrombosis, arterial
Arginine		74-79-3			
Ariflo®		153259-65-5			
aripiprazole	2(1H)-Quinolone, 7-[4-[4-(2,3-dichlorophenyl)-1-piperazinyl]butoxy]-3,4-dihydro- [CAS]	129722-12-9	EP 367141	Neuroleptic	Schizophrenia



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arofylline	1H-Purine-2,6-dione, 3-(4-chlorophenyl)-3,7-dihydro-1-propyl- [CAS]	136145-07-8	EP 435811	COPD treatment	Chronic obstructive pulmonary disease
arotinolol	2-Thiophenecarboxamide, 5-[2-[[3-[[1,1-dimethylethyl)amino]-2-hydroxypropyl]thio]-4-thiazolyl]-, (±)- [CAS]	104766-23-6 68377-92-4	US 3932400	Antihypertensive, adrenergic	Hypertension, general
<b>Arsacetin</b>		618-22-4			
arsenic trioxide	Arsenic oxide (As <sub>2</sub> O <sub>3</sub> ) [CAS]	1327-53-3		Anticancer, other	Cancer, leukaemia, acute myelogenous
<b>Arsphenamine</b>		139-93-5			
<b>Arsthinol</b>		119-96-0			
<b>Arteether</b>		75887-54-6			
<b>Arteflene</b>		123407-36-3 (Z form)			
<b>Artemether</b>		71963-77-4			
<b>Artemisinin</b>		63968-64-9			
artemotil	3,12-Epoxy-12H-pyrano[4,3-j]-1,2-benzodioxepin, 10-ethoxydecahydro-3,6,9-trimethyl-, [3R-(3 $\alpha$ ,5 $\alpha$ ,6 $\beta$ ,8 $\alpha$ ,9 $\alpha$ ,10 $\alpha$ ,12 $\beta$ ,12 $\alpha$ R*)]- [CAS]	75887-54-6		Antimalarial	Infection, malaria
artesunate	Butanedioic acid mono-[(3R,5aS,6R,8aS,9R,10R,12R,12aR)-decahydro-3,6,9-trimethyl-3,12-epoxy-12H-pyrano[4,3-j]-1,2-benzodioxepin-10-yl]ester	88495-63-0		Formulation, transmucosal, systemic	Infection, malaria
arzoifene	Benzo(b)thiophene-6-ol, 2-(4-methoxyphenyl)-3-(4-(2-(1-piperidinyl)ethoxy)phenoxy)- [CAS]	182133-27-3	WO 9609041	Anticancer, hormonal	Cancer, breast
AS-3201	Spiro(pyrrolidine-3,4'(1'H)-pyrrolo(1,2-a)pyrazine)-1',2',3',5'(2'H)-tetrone, 2'-((4-bromo-2-fluorophenyl)methyl)-, (3'R)- [CAS]	147254-64-6	EP 520320	Symptomatic antidiabetic	Diabetic complication, general
ASA	Benzoic acid, 2-(acetoxy)- [CAS]	50-78-2 56449-07-1		Formulation, modified-release, other	Pain, general

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$\alpha$ -Santonin		481-06-1			
Ascaridole		512-85-6			
Ascorbic Acid		50-81-7			
asenapine	1H-Dibenz[2,3:6,7]oxepino[4,5-c]pyrrole, 5-chloro-2,3,3a,12b-tetrahydro-2-methyl-, trans-, (Z)-2-butenedioate (1:1) [CAS]	85650-56-2	WO 9523600	Neuroleptic	Psychosis, general
asimadoline	Benzeneacetamide, N-[2-(3-hydroxy-1-pyrrolidinyl)-1-phenylethyl]-N-methyl- $\alpha$ -phenyl-, [S-(R*, R*)]- [CAS]	153205-46-0	DE 4215213	GI inflammatory/bowel disorders	Irritable bowel syndrome
asoprisnil	11 $\beta$ -[4-(Hydroxyiminomethyl)phenyl]-17 $\beta$ -methoxy-17 $\alpha$ -methyl-17-estradiol-4,9-dien-3-one	199396-76-4	EP 0648778	Menstruation disorders	Endometriosis
<b>Asoxime</b>		34433-31-3			
<b>Aspartic Acid</b>		56-84-8			
<b>Aspidin</b>		584-28-1			
<b>Aspidinol</b>		519-40-4			
<b>Aspirin</b>		50-78-2			
<i>Aspirin</i> , <i>Dipyridamole</i>					
aspoxicillin	Glycinamide, N-methyl-D-asparaginy-N-(2-carboxy-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]hept-6-yl)-D-2-(4-hydroxyphenyl)-, [2S-(2 $\alpha$ ,5 $\alpha$ ,6 $\alpha$ )]-[CAS]	63358-49-6	GB 1533413	Penicillin, injectable	Infection, respiratory tract, general
AST-120	AST 120 [CAS]	90597-58-3		Urological	Renal failure
<b>Astemizole</b>		68844-77-9			
asulacrine	4-Acridinecarboxamide, 9-[[2-methoxy-4-[(methylsulfonyl)amino]phenyl]amino]-N,5-dimethyl-, [CAS]	80841-47-0 80841-48-1	EP 39224	Anticancer, other	Cancer, general
AT-1015	(N-[2-(4-(5H-Dibenzo[a,d]cyclohepten-5-ylidene)-piperidino]ethyl)-1-formyl-4-piperidinecarboxamide monohydrochloride monohydrate				
atamestane	Androsta-1,4-diene-3,17-dione, 1-methyl-, [CAS]	96301-34-7	DE 3338212	Antithrombotic Anticancer, hormonal	Thrombosis, general Cancer, breast

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
atazanavir	2,5,6,10,13-Pentazatetradecanedioic acid, 3,12-bis(1,1-dimethylethyl)-8-hydroxy-4,11-dioxo-9-(phenylmethyl)-6-((4-(2-pyridinyl)phenyl)methyl)- dimethyl ester, (3S,8S,9S,12S)-, sulfate (1:1) (salt) [CAS]	229975-97-7		Antiviral, anti-HIV	Infection, HIV/AIDS
atenolol	Benzeneacetamide, 4-[2-hydroxy-3-[(1-methylethyl)amino]propoxy]- [CAS]	29122-68-7 73677-19-7	GB 1285038	Antihypertensive, adrenergic	Hypertension, general
atenolol + chlorthalidone	Benzeneacetamide, 4-[2-hydroxy-3-[(1-methylethyl)amino]propoxy]-, mixt. with 2-chloro-5-(2,3-dihydro-1-hydroxy-3-oxo-1H-isoindol-1-yl)benzenesulfonamide [CAS]	73677-19-7	US 3836671	Formulation, fixed-dose combinations	Hypertension, general
atenolol + nifedipine	Benzeneacetamide, 4-[2-hydroxy-3-[(1-methylethyl)amino]propoxy]- + 4-(2'-nitrophenyl)-2,6-dimethyl-3,5-dicarbomethoxy-1,4-dihydropyridine			Formulation, fixed-dose combinations	Hypertension, general
$\alpha$ -Terpineol		98-55-5			
Ateviridine		136816-75-6			
atipamezole	1H-Imidazole, 4-(2-ethyl-2,3-dihydro-1H-inden-2-yl)- [CAS]	104054-27-5	EP 183492	Reproductive/gonadal, general	Sexual dysfunction, female
atiprimod dimaleate	2-Azaspivo[4.5]decane-2-propanamine, N,N-diethyl-8,8-dipropyl, dimaleate				
ATL-146e		130065-61-1	US 5744495	Antiarthritic, immunological	Arthritis, rheumatoid
$\alpha$ -Tocopherol			US 6232297	Imaging agent	Unspecified
atomoxetine		59-02-9			
	Benzenepropanamine, N-methyl-Gamma-(2-methylphenoxy)-, (R)- [CAS]	82248-59-7 83015-26-3	EP 52492	Neurological	Attention deficit disorder
atorvastatin	1H-Pyrrole-1-heptanoic acid, 2-(4-fluorophenyl)- $\beta$ ,delta-dihydroxy-5-(1-methylethyl)-3-phenyl-4-[(phenylamino)carbonyl]- [CAS]	134523-03-8 134523-00-5	EP 409281	Hypolipaeamic/Antiatherosclerosis	Hypercholesterolaemia
atosiban	Oxytocin, 1-(3-mercaptopropanoic acid)-2-(O-ethyl-D-tyrosine)-4-L-threonine-8-L-ornithine- [CAS]	90779-69-4	EP 112809	Labour inhibitor	Labour, preterm

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atovaquone	1,4-Naphthalenedione, 2-[4-(4-chlorophenyl)cyclohexyl]-3-hydroxy-, trans- [CAS]	95233-18-4	EP 123238	Antifungal	Infection, Pneumocystis jiroveci
atovaquone + proguanil	1,4-Naphthalenedione, 2-[4-(4-chlorophenyl)cyclohexyl]-3-hydroxy-, trans + N-(4-chloro-phenyl)-N-(1-methylethyl)imidiodicarbonimidic diamide			Antimalarial	Infection, malaria
atracurium	Isoquinolinium, 2,2'-[1,5-pentanediy]bis[oxy(3-oxo-3,1-propanediyl)]bis[1-[(3,4-dimethoxyphenyl)methyl]-1,2,3,4-tetrahydro-6,7-dimethoxy-2-methyl- [CAS]	64228-81-5	US 4179557	Muscle relaxant	Surgery adjunct
atrasentan	3-Pyrrolidinecarboxylic acid, 4-(1,3-benzodioxol-5-yl)-1-[2-(dibutylamino)-2-oxoethyl]-2-(4-methoxyphenyl)-, (2R,3R,4S)- [CAS]	173937-91-2	WO 9730045	Anticancer, other	Cancer, prostate
Atrial Natriuretic Peptide		85637-73-6			
Atrolactamide		2019-68-3			
Atropine		51-55-8			
Augmentin		74469-00-4		Formulation, modified-release, other	Infection, respiratory tract, general
auranofin	Gold, (1-thio-β-D-glucopyranose 2,3,4,6-tetraacetato-S)(triethylphosphine)-[CAS]	34031-32-8	US 3708579	Antiarthritic, other	Arthritis, rheumatoid
Aurothiogluucose		12192-57-3			
avasimibe	Sulfamic acid, [[2,4,6-tris(1-methylethyl)phenyl]acetyl]-, 2,6-bis(1-methylethyl)phenyl ester [CAS]	166518-60-1	US 5491172	Hypolipaeamic/Antiatherosclerosis	Atherosclerosis
Avobenzone		70356-09-1			
AWD-12-281	AWD 12-281 [CAS]	257892-33-4		Antiallergic, non-asthma	Rhinitis, allergic, general
Azacitidine		320-67-2			
Azacyclozol		115-46-8			
azanidazole	2-Pyrimidinamine, 4-[2-(1-methyl-5-nitro-1H-imidazol-2-yl)ethenyl]-, (E)- [CAS]	62973-76-6	US 3882105	Antibacterial, other	Infection, trichomoniasis





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<b>Azosemide</b>		27589-33-9			
	Propanoic acid, 2-[[[1-(2-amino-4-thiazolyl)-2-[(2-methyl-4-oxo-1-sulfo-3-azetidyl)amino]-2-oxoethylidene]amino]oxy]-2-methyl-, [2S-[2Alpha,3l(Z)]]-[CAS]	104184-69-2 78110-38-0	GB 2071650	Beta-lactam antibiotic	Infection, general
aztreonam	Sodium 5-isopropyl-3,8-dimethyl-1-azulene sulfonate	6223-35-4	EP 88958	Formulation, modified-release, other	Inflammation, general
azulene					
	4-Thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid, 6-[[[aminophenylacetyl]amino]-3,3-dimethyl-7-oxo-, 1-[(ethoxycarbonyl)oxy]ethyl ester, [2S-[2Alpha,5Alpha,6l(S*)]]-[CAS]	37661-08-8 50972-17-3 1405-87-4	GB 1363506	Penicillin, oral	Infection, general
bacampicillin					
<b>Bacitracin</b>					
baclofen	B-(Aminomethyl)-4-chlorobenzenepropanoic acid [CAS]	1134-47-0 491-67-8		Formulation, implant	Spastic paralysis
Baicalein					
	3-Quinolonecarboxylic acid, 1-cyclopropyl-6-fluoro-1,4-dihydro-8-methoxy-7-[3-(methylamino)-1-piperidinyl]-4-oxo- [CAS]	127294-70-6	EP 342675	Quinolone antibacterial	Infection, urinary tract
balofloxacin					
	Benzoic acid, 5-[4-[[[2-carboxyethyl]amino]carbonyl]phenyl]azo]-2-hydroxy-, (E)- [CAS]	80573-04-2	US 4412992	GI inflammatory/bowel disorders	Colitis, ulcerative
balsalazide					
	Carbamic acid, dimethyl-, 5-[2-[[1,1-dimethyl(ethyl)amino]-1-hydroxyethyl]-1,3-phenylene ester, monohydrochloride [CAS]	81732-46-9 81732-65-2	EP 43807	Antiasthma	Asthma
bambuterol		3703-79-5			
<b>Bamethan</b>		2016-63-9			
<b>Bamifylline</b>		4945-47-5			
<b>Bamipine</b>		57-44-3			
<b>Barbital</b>					
	3,5-Pyridinedicarboxylic acid, 1,4-dihydro-2,6-dimethyl-4-(3-nitrophenyl)-, methyl-1-(phenylmethyl)-3-pyrrolidinyl ester, [S-(R*,R*)]-	104713-75-9 104757-53-1 71863-56-4	US 4220649	Antihypertensive, other	Hypertension, general
barnidipine					



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BAS-118	N-Methyl-3-[2-(2-naphthyl)acetylaminol]benzamide			Antibacterial, other	Infection, <i>Helicobacter pylori</i>
Basic Aluminum Carbonate Gel		1339-92-0			
Basiliximab		179045-86-4			
Batimastat		130370-60-4			
Batroxobin		9039-61-6			
Bay-41-2272	5-cyclopropyl-2-[1(2-fluoro-benzyl)-1H-pyrazolo[3,4-b]pyridine-3-yl]-5-(4-morpholinyl)pyrimidine-4-ylamine			Male sexual dysfunction	Sexual dysfunction, male, general
Bay-41-8543	2-[1-(2-Fluorobenzyl)-1H-pyrazolo[3,4-b]pyridin-3-yl]-5-(4-morpholinyl)pyrimidine-4,6-diamine			Cardiovascular	Unspecified
BAY-43-9006	N-(4-chloro-3-(trifluoromethyl)phenyl)-N'-(4-(2-(N-methylcarbamoyl)-4-pyridyloxy)phenyl)urea			Anticancer, other	Cancer, liver
BAY-57-1293 bazedoxifen	N-[5(aminosulfonyl)-4-methyl-1,3-thiazol-2-yl]-N-methyl-2-[4-(2-pyridinyl)phenyl]acetamide			Antiviral, other	Infection, herpes simplex virus
$\beta$ -Benzalbutyramide	TSE 424 [CAS]	198481-33-3	EP 802183	Osteoporosis treatment	Osteoporosis
BBR-3464	Platinum(4+), hexaaminedichlorobis( $\mu$ -(1,6-hexanediamine-N:N'))tri- stereoisomer, tetranitrate [CAS]	7236-47-7			
BBR-3576		172903-00-3	US 5744497	Anticancer, alkylating	Cancer, lung, non-small cell
BBR-3610			US 5519029	Anticancer, antibiotic	Cancer, prostate
$\beta$ -Carotene			US 6060616	Anticancer, alkylating	Cancer, general
BCH-1868	(-)-2-R-dihydroxyphosphinyl-5-(S)-(guanin-9'-yl-methyl)tetrahydrofuran	7235-40-7			
Bebeerine		477-60-1		Anticancer, antimetabolite	Cancer, general
Beclamide		501-68-8			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
beclometasone	Pregna-1,4-diene-3,20-dione, 9-chloro-11 $\beta$ ,17,21-trihydroxy-16 $\beta$ -methyl, [CAS]	5534-09-8 4419-39-0	WO 0006132	Formulation, inhalable, solution	Asthma
<b>Befloxatone</b>		134564-82-2			
befunolol	Ethanone, 1-[7-[2-hydroxy-3-[(1-methylethyl)amino]propoxy]-2-benzofuranyl]-[CAS]	39543-79-8 39552-01-7		Antiglaucoma	
<b>Bemegride</b>		64-65-3			
<b>Benactyzine</b>		302-40-9			
benazepril	1H-1-Benzazepine-1-acetic acid, 3-[[1-(ethoxycarbonyl)-3-phenylpropyl]amino]-2,3,4,5-tetrahydro-2-oxo-, [S-(R*,R*)]-[CAS]	86541-74-4 86541-75-5 86541-78-8	EP 72352	Antihypertensive, renin system	Hypertension, general
bencyclane	1-Propanamine, N,N-dimethyl-3-[[1-(phenylmethyl)cycloheptyloxy]-, (E)-2-butenedioate (1:1) [CAS]	14286-84-1 2179-37-5	WO 9829409	Vasodilator, peripheral	
bendazac	L-Lysine, mono[[[1-(phenylmethyl)-1H-indazol-3-yl]oxy]acetate] [CAS]	81919-14-4 20187-55-7	GB 2081708	Ophthalmological	
<b>Bendroflumethiazide</b>		73-48-3			
<b>Benexate</b>		78718-25-9			
benfluorex	Ethanol, 2-[[1-methyl-2-[3-(trifluoromethyl)phenyl]ethyl]amino]-, benzoate (ester) [CAS]	23602-78-0 23642-66-2	GB 1175516	Hypolipaeamic/Antiatherosclerosis	
<b>Benfotiamine</b>		22457-89-2			
<b>Benfurodil</b>		3447-95-8			
benidipine	3,5-Pyridinedicarboxylic acid, 1,4-dihydro-2,6-dimethyl-4-(3-nitrophenyl)-, methyl 1-(phenylmethyl)-3-piperidinyl ester, monohydrochloride (R*,R*)-(+/-)-[CAS]	105979-17-7 91599-74-5	EP 63365	Antihypertensive, other	Hypertension, general
<b>Benorylate</b>		5003-48-5			
<b>Benoxaprofen</b>		67434-14-4			
<b>Benoxinate</b>		99-43-4			
<b>Benperidol</b>		2062-84-2			
<b>Benproperine</b>		2156-27-6			
<b>Benserazide</b>		322-35-0			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
bentazepam	2H-[1]Benzothieno[2,3-e]-1,4-diazepin-2-one, 1,3,6,7,8,9-hexahydro-5-phenyl[CAS]	29462-18-8	DE 2005276	Anxiolytic	
<b>Bentiromide</b>		37106-97-1			
<b>Bentoquatam</b>		1340-69-8			
<b>Benzalkonium</b>		8001-54-5			
<b>Benzarone</b>		1477-19-6			
benzbromarone	Methanone, (3,5-dibromo-4-hydroxyphenyl)(2-ethyl-3-benzofuranyl)-[CAS]	3562-84-3	US 3012042	Antigout	
<b>Benzethonium</b>		121-54-0			
<b>Benzetimide</b>		14051-33-3			
<b>Benzilonium</b>		1050-48-2			
<b>Benzlodarone</b>		68-90-6			
benznidazole	N-benzyl-2-nitroimidazole-1-acetamide	22994-85-0	GB 1138529	Protozoacide	
benzocaine	Benzoic acid, 4-amino-, ethyl ester	94-09-7		Formulation, fixed-dose combinations	Pain, musculoskeletal
<b>Benzocetamine</b>		17243-39-9			
<b>Benzonatate</b>		104-31-4			
<b>Benzoxonium Chloride</b>		19379-90-9			
benzoyl peroxide	Peroxide, dibenzoyl [CAS]	94-36-0		Formulation, other	Acne
<b>Benzoylpas</b>		13898-58-3			
<b>Benzphetamine</b>		156-08-1			
<b>Benzpiperylon</b>		53-89-4			
<b>Benzquinamide</b>		63-12-7			
<b>Benzthiazide</b>		91-33-8			
<b>Benztropine</b>		132-17-2			
benzylamine	1-Propanamine, N,N-dimethyl-3-[[1-(phenylmethyl)-1H-indazol-3-yl]oxy]- [CAS]	132-69-4 642-72-8		Stomatological, reproductive/gonadal, anti-inflammatory	
<b>Benzyl Benzoate</b>		120-51-4			
<b>Benzylhydrochlorothiazide</b>		1824-50-6			
<b>Benzylmorphine</b>		14297-87-1			

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Bephenium Hydroxynaphthoate		3818-50-6			
bepotastine	1-Piperidinebutanoic acid, 4-((4-chlorophenyl)-2-pyridinylmethoxy)-, (S)-, monobenzenesulfonate [CAS]	190786-44-8 190786-43-7	WO 9829409	Antiallergic, non-asthma	Allergy, general
bepiridil	1-Pyrrolidineethanamine, $\beta$ -[(2-methylpropoxy)methyl]-N-phenyl-N-(phenylmethyl)- [CAS]	64706-54-3 74764-40-2 74764-75-3	EP 146155	Antianginal	Angina, general
beraprost	1H-Cyclopenta[b]benzofuran-5-butanoic acid, 2,3,3a,8b-tetrahydro-2-hydroxy-1-(3-hydroxy-4-methyl-1-octen-6-ynyl)- [CAS]	88475-69-8 88430-50-6	US 4474802	Prostaglandin	Peripheral vascular disease
Berberine		2086-83-1			
Bergapten		484-20-8			
Bermopropfen		78499-27-1			
Besipirdine		119257-34-0			
betahistine	2-Pyridineethanamine, N-methyl-, dihydrochloride	5579-84-0 5638-76-6		Formulation, modified-release, $\leq 24$ hr	Meniere's disease
betaine	Betaine- [CAS]	107-43-7		Metabolic and enzyme disorders	Homocystinuria
betamethasone	Pregna-1,4-diene-3,20-dione, 9-fluoro-11,17,21-trihydroxy-16-methyl-, (11 $\beta$ ,16 $\beta$ )- [CAS]	378-44-9		Formulation, dermal, topical	Psoriasis
Betamipron		3440-28-6			
Betasine		3734-24-5			
betaxolol	2-Propanol, 1-[4-[2-(cyclopropylmethoxy)ethyl]phenoxy]-3-[(1-methylethyl)amino]- [CAS]	63659-18-7 63659-19-8	US 4252984	Antihypertensive, adrenergic	Hypertension, general, glaucoma
Betazole		105-20-4			
Bethanechol		590-63-6			
Bethanidine		55-73-2			
Betoxycaine		3818-62-0			
$\beta$ -Eucaïne		500-34-5			
bevantolol	2-Propanol, 1-[[2-(3,4-dimethoxyphenyl)ethyl]amino]-3-(3-methylphenoxy)- [CAS]	42864-78-8 59170-23-9	US 3857891	Antihypertensive, adrenergic	Hypertension, general
Bevonium		5205-82-3			

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bexarotene	Benzoic acid, 4-(1-(5,6,7,8-tetrahydro-3,5,5,8,8-pentamethyl-2-naphthalenyl)ethenyl)- [CAS]	153559-49-0	WO 9321146	Anticancer, other	Cancer, lymphoma, T-cell
bezafibrate	Propanoic acid, 2-[4-[2-[(4-chlorobenzoyl)amino]ethyl]phenoxy]-2-methyl- [CAS]	41859-67-0	GB 1359264	Hypolipemic/Antiatherosclerosis	
<b>Bezitamide</b>		15301-48-1			
BG-9928		166374-48-7		Cardio stimulant	Heart failure
BIA-2-024	10,11-dihydro-10-hydroxyimino-5H-dibenz[b,f]azepine-5-carboxamide	199997-15-4	WO 9745416	Antiepileptic	Epilepsy, general
BIA-2-093	(S)-(-)-10-acetoxy-10,11-dihydro-5H-dibenz[b,f]azepine-5-carboxamide- [CAS]	236395-14-5		Antiepileptic	Epilepsy, general
BIA-3-202	1-(3,4-dihydroxy-5-nitrophenyl)-2-phenylethanone	274925-86-9	EP 1010688	Antiparkinsonian	Parkinson's disease
<b>Bialamicol</b>		493-75-4			
biapenem	5H-Pyrazolo[1,2-a][1,2,4]triazol-4-ium, 6-[[2-carboxy-6-(1-hydroxyethyl)-4-methyl-7-oxo-1-azabicyclo[3.2.0]hept-2-en-3-yl]thio]-6,7-dihydro-, hydroxide, inner salt, [4R-[4A]alpha,5S,6S(R*)]- [CAS]	120410-24-4	EP 289801	Beta-lactam antibiotic	Infection, beta-lactamase resistant
<b>Bibenzonium</b>		15585-70-3			
<b>Bibrocatol</b>		6915-57-7			
bicalutamide	Propanamide, N-[4-cyano-3-(trifluoromethyl)phenyl]-3-[[4-(fluorophenyl)sulfonyl]-2-hydroxy-2-methyl-, (+/-)- [CAS]	90357-06-5	EP 100172	Anticancer, hormonal	Cancer, prostate
bicifadine	3-Azabicyclo[3.1.0]hexane, 1-(4-methylphenyl)-, (+/-)- [CAS]	66504-75-4	DE 2740562	Analgesic, other	Pain, general
bicyclic monoterpene diols		71195-57-8	US 6294585	Dermatological	Unspecified
<b>Bidisomide</b>		116078-65-0			
<b>Bietamiverine</b>		479-81-2			
<b>Bietanaufine</b>		6888-11-5			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Bietaserpine	1-Butanamine, N-methyl-4-[2-(phenylmethyl)phenoxy]-, hydrochloride [CAS]	53-18-9			
bifemelane		62232-46-6			
<b>Bifluranol</b>		90293-01-9	GB 1512880	Cognition enhancer	Attention deficit disorder
		34633-34-6			
		60628-96-8			
bifonazole	1H-Imidazole, 1-([1,1'-biphenyl]-4-ylphenylmethyl)- [CAS]	60629-08-5			
	5-Heptenamide, 7-(3,5-dihydroxy-2-(3-hydroxy-5-phenyl-1-pentenyl)cyclopentyl)-N-ethyl (1R-(1Alpha(Z)2S(1E,3S,3Alpha,5Alpha)) [CAS]	60629-09-6	US 4118487	Antifungal	Infection, fungal, general
bimatoprost		155206-00-1	US 5688819	Prostaglandin	Glaucoma
bimoclomol	N-[2-hydroxy-3-(1-piperidinyl)propoxy]-3-pyridinecarboximidoyl chloride, (Z)-2-butanedioate (1:1)	130493-04-8	US 5147874	Symptomatic antidiabetic	Neuropathy, diabetic
bimosiamose	(1,1'-Biphenyl)-3-acetic acid, 3',3'''-(1,6-hexanedyl)bis(6'-Alpha-D-mannopyranosyloxy)-, [CAS]	187269-40-5	US 5444050	Antiasthma	Asthma
<b>Binifibrate</b>		69047-39-8			
binodenoson	Adenosine, 2-((cyclohexylmethylene)hydrazino)- [CAS]	144348-08-3		Vasodilator, coronary	Diagnosis, coronary
Biomed-101			US 6423744	Anticancer, other	Cancer, renal
<b>Biotin</b>		58-85-5			
<b>Biperiden</b>		514-65-8			
	2-Piperidinecarboxylic acid, 1-(oxo(3,4,5-trimethoxyphenyl)acetyl)-, 4-(3-pyridinyl)-1-(3-(3-pyridinyl)propyl)butyl ester, (S)-, 2-hydroxy-1,2,3-propanetricarboxylate (1:2) [CAS]	174254-13-8			
biricodar		159997-94-1		Radio/chemosensitizer	Cancer, breast
	1-Butanone, 1-(4-fluorophenyl)-4-(3,4,6,7,12,12a-hexahydropyrazino[1',2':1,6]pyrido[3,4-b]indol-2(1H)-yl)- [CAS]				
biriperone		42021-34-1	DE 2333922	Neuroleptic	
<b>Bisacodyl</b>		603-50-9			



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Bisantrene		78186-34-2			
Bisbentamine		2667-89-2			
Bisdequalinium		52951-36-7			
Bismuth Aluminate		12284-76-3			
Bismuth		53897-25-9			
Butylthiolaurate					
Bismuth Ethyl		52951-37-8			
Camphorate		138-58-9			
Bismuth Iodosubgallate					
Bismuth Sodium Iodide		53778-50-0			
Bismuth Sodium		5798-43-6			
Triglycollamate		5892-10-4			
Bismuth Subcarbonate		22650-86-8			
Bismuth Subgallate		1304-85-4			
Bismuth Subnitrate		14882-18-9			
Bismuth Subsalicylate		5175-83-7			
Bismuth					
Tribromophenate					
bisoprolol	2-Propanol, 1-[4-[[2-(1-methylethoxy)ethoxy]methyl]phenoxy]-3-[[1-methylethyl)amino]- [CAS]	104344-23-2 66722-44-9	GB 1532380	Antihypertensive, adrenergic	Heart failure
bisoprolol + HCTZ	2-Propanol, 1-[4-[[2-(1-methylethoxy)ethoxy]methyl]phenoxy]-3-[[1-methylethyl)amino] mixt. with 6-chloro-3,4-dihydro-2H-1,2,4-benzothiadiazine-7-sulfonamide 1,1-dioxide			Formulation, fixed-dose combinations	Hypertension, general
bisoprolol+trichloromethiazide	2-Propanol, 1-[4-[[2-(1-methylethoxy)ethoxy]methyl]phenoxy]-3-[[1-methylethyl)amino] mixt. with 6-chloro-3-(dichloromethyl)-3,4-dihydro-2H-1,2,4-benzothiadiazine-7-sulfonamide 1,1-dioxide			Formulation, fixed-dose combinations	Hypertension, general

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Bisoxatin		14008-48-1			
Bithionol		97-18-7			
Bitolterol		30392-40-6			
Bitoscanate		4044-65-9			
BL-3875			WO 0218378	Anti-inflammatory	Unspecified
bleomycin	Bleomycin [CAS]	11056-06-7		Formulation, transdermal, enhanced	Cancer, head and neck
blonanserine	Cycloocta[b]pyridine, 2-(4-ethyl-1-piperazinyl)-4-(4-fluorophenyl)-5,6,7,8,9,10-hexahydro- [CAS]	132810-10-7	EP 385237	Neuroleptic	Schizophrenia
BMS-184476			EP 639577	Anticancer, other	Cancer, breast
BMS-387032	cis-(+/-)-2-(Ethylthio)-5,7-dihydroxy-8-(3-hydroxy-1-methyl-4-piperidinyl)-4H-1-benzopyran-4-one		WO 9742949	Anticancer, other	Cancer, general
BN-82451	4-[2-(aminomethyl)-1,3-thiazol-4-yl]-2,6-di-tert-butylphenol, dihydrochloride			Neuroprotective	Unspecified
BNP-7787	Ethanesulfonic acid, 2,2'-dithiobis-, disodium salt [CAS]	16208-51-8		Radio/chemoprotective	Chemotherapy-induced nausea and vomiting
BO-653	5-Benzofuranol, 4,6-bis(1,1-dimethylethyl)-2,3-dihydro-2,2-dipentyl- [CAS]	157360-23-1	WO 9408930	Hypolipemic/Antiatherosclerosis	Atherosclerosis
Bolandiol		19793-20-5			
Bolasterone		1605-89-6			
Boldenone		846-48-0			
bopindolol	2-Propanol, 1-[(1,1-dimethylethyl)amino]-3-[[2-methyl-1H-indol-4-yl)oxy]-, benzoate (ester), (+/-)- [CAS]	62658-63-3			
Bornyl Chloride		82857-38-3	US 4340541	Antihypertensive, adrenergic	Hypertension, general
Bornyl Salicylate		464-41-5			
		560-88-3			
bortezomib	Boric acid, [(1R)-3-methyl-1-[[[(2S)-1-oxo-3-phenyl-2-[[pyrazinyl(carbonyl)amino]propyl]amino]butyl]- [CAS]	179324-69-7	US 6271199	Anticancer, other	Cancer, myeloma

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bosentan	Benzenesulfonamide, 4-(1,1-dimethylethyl)-N-[6-(2-hydroxyethoxy)-5-(2-methoxyphenoxy)[2,2'-bipyrimidin]-4-yl]-[CAS]	147536-97-8	EP 633259	Vasodilator, peripheral	Hypertension, pulmonary
BP2.94	Phenol, 2-[[[(1R)-2-(1H-imidazol-4-yl)-1-methylethyl]imino]phenylmethyl]-[CAS]	139191-80-3	WO 9117146	Respiratory	Rhinitis, general
BP4.897	N-[4-[4-(2-methoxyphenyl)-1-piperazinyl]butyl]naphthalene-2-carboxamide				
<b><math>\beta</math>-Propiolactone</b>		57-57-8	EP 779284	Dependence treatment	Addiction, cocaine
<b>Bradycor</b>		140661-97-8			
<b>Brain Natriuretic Peptide</b>		114471-18-0			
<b>Brallobarbitol</b>		561-86-4			
	8-Azabicyclo(3.2.1)octane-2-carboxaldehyde, 3-(3,4-dichlorophenyl)-8-methyl-, O-methyloxime, (1R)-(1Alpha,2B(E),3Alpha,5Alpha))-[CAS]	171655-91-7	WO 9528401	Antiparkinsonian	Parkinson's disease
brasofensine		96187-53-0			
<b>Brequinar</b>		61-75-6			
<b>Bretylium</b>		633-03-4			
<b>Brilliant Green</b>					
brimonidine	6-Quinoxalinamine, 5-bromo-N-(4,5-dihydro-1H-imidazol-2-yl)-[CAS]	59803-98-4	DE 2538620	Antiglaucoma	Glaucoma
	2H-Thieno(3,2-e)-1,2-thiazine-6-sulfonamide, 4-(ethylamino)-3,4-dihydro-2-(3-methoxypropyl)-, 1,1-dioxide, (R)-[CAS]				
brinzolamide	Uridine, 5-(2-bromoethenyl)-2'-deoxy, (E)-[CAS]	138890-62-7	US 5378703	Antiglaucoma	Glaucoma
brivudin		69304-47-8		Antiviral, other	Infection, varicella zoster virus
<b>Brodimoprim</b>		56518-41-3			
<b>Bromazepam</b>		1812-30-2			
bromfenac	Benzenecarboxylic acid, 2-amino-3-(4-bromobenzoyl)-[CAS]	91714-93-1 91714-94-2		Formulation, mucosal, topical	Inflammation, ocular
<b>Bromhexine</b>		3572-43-8			
<b>Bromindione</b>		1146-98-1			
<b>Bromisovalum</b>		496-67-3			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Bromocriptine		25614-03-3			
Bromodiphenhydramine		118-23-0			
Bromoform		75-25-2			
Bromopride		4093-35-0			
Bromosalicylchloranilide		3679-64-9			
bromperidol	1-Butanone, 4-[4-(4-bromophenyl)-4-hydroxy-1-piperidinyl]-1-(4-fluorophenyl)-[CAS]	10457-90-6	US 3438991	Neuroleptic	Psychosis, general
Brompheniramine		86-22-6			
Broparoesol		479-68-5			
Bropirimine		56741-95-8			
brostallicin	4-(2-Bromoacrylamido)-N"-{2-guanidinoethyl)-1,1',1",1"'-tetramethyl-N,4':N',4"N",4"-quater-[pyrrole-2-carboxamide] [CAS]			Anticancer, other	Cancer, general
brotizolam	6H-Thieno[3,2-f][1,2,4]triazolo[4,3-a][1,4]diazepine, 2-bromo-4-(2-chlorophenyl)-9-methyl- [CAS]	57801-81-7	US 4094984	Hypnotic/Sedative	
Brovincamine		57475-17-9			
Broxuridine		59-14-3			
Broxyquinoline		521-74-4			
Brucine		357-57-3			
$\beta$ -Sitosterol		83-46-5			
Bucetin		1083-57-4			
Bucillamine		65002-17-7			
Bucindolol		71119-11-4			
bucledesine	Adenosine, N-(1-oxobutyl)-, cyclic 3',5'-(hydrogen phosphate) 2'-butanoate [CAS]	362-74-3	JP 51113896	Cardio stimulant	Wound healing
Bucilizine		82-95-1			
Buclosamide		575-74-6			
Bucolome		841-73-6			
bucricaine	9-Acridinamine, N-butyl-1,2,3,4-tetrahydro-, monohydrochloride [CAS]	82636-28-0		Anaesthetic, local	

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<b>Bucumolol</b>	Pregna-1,4-diene-3,20-dione, 16,17-[butylidenebis(oxy)]-11,21-dihydroxy-, (11S,16Apha)- [CAS]	58409-59-9			
budesonide		51333-22-3	GB 1429922	Antiasthma	Asthma
budesonide + formoterol	Pregna-1,4-diene-3,20-dione, 16,17-[butylidenebis(oxy)]-11,21-dihydroxy-, (11S,1bAlpha) + formamide, N-[2-hydroxy-5-[1-hydroxy-2-[[2-(4-methoxyphenol)-1-methylethyl]amino]ethyl]phenyl]-(R*,R*)-(±)			Formulation, fixed-dose combinations	Asthma
budipine	Piperidine, 1-(1,1-dimethylethyl)-4,4-diphenyl- [CAS]	57982-78-2 63661-61-0	DE 2825322	Antiparkinsonian	Parkinson's disease
<b>Budralazine</b>		36798-79-5			
<b>Bufeniodide</b>		22103-14-6			
<b>Bufetolol</b>		53684-49-4			
bufexamac	p-butoxyacetohydroxamic acid	2438-72-4	US 3479396	Anti-inflammatory	
buflomedil	1-Butanone, 4-(1-pyrrolidinyl)-1-(2,4,6-trimethoxyphenyl)- [CAS]	35543-24-9 55837-25-7	GB 1325192	Vasodilator, peripheral	
<b>Buformin</b>		692-13-7			
<b>Bufuralol</b>		54340-62-4			
<b>Bumadizon</b>		3583-64-0			
bumetanide	Benzoic acid, 3-(aminosulfonyl)-5-(butylamino)-4-phenoxy- [CAS]	28395-03-1	US 3806534	Antihypertensive, diuretic	Hypertension, general
bunaftine	1-Naphthalenecarboxamide, N-butyl-N-[2-(diethylamino)ethyl]- [CAS]	32421-46-8	DE 2009894	Antiarrhythmic	
<b>Bunamiodyl Sodium</b>		1923-76-8			
bunazosin	1H-1,4-Diazepine, 1-(4-amino-6,7-dimethoxy-2-quinazolinyl)hexahydro-4-(1-oxobutyl)- [CAS]	52712-76-2 80755-51-7	GB 1398455	Antihypertensive, adrenergic	Hypertension, general
bunitrolol	Benzonitrile, 2-[3-[(1,1-dimethylethyl)amino]-2-hydroxypropoxy]- [CAS]	34915-68-9	US 3940489	Antihypertensive, adrenergic	
bupivacaine	2-Piperidinecarboxamide, 1-butyl-N-(2,6-dimethylphenyl)- [CAS]	38396-39-3 2180-92-9		Formulation, modified-release, >24hr	Anaesthesia
<b>Bupranolol</b>		14556-46-8			

Table IV

API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
buprenorphine	6,14-Ethenomorphinan-7-methanol, 17-(cyclopropylmethyl)-Alpha-(1,1-dimethylethyl)-4,5-epoxy-18,19-dihydro-3-hydroxy-6-methoxy-Alpha-methyl-, [5Alpha,7Alpha(S)]- [CAS]	52485-79-7 53152-21-9	US 3433791	Analgesic, other	
bupropion	1-Propanone, 1-(3-chlorophenyl)-2-[(1,1-dimethylethyl)amino]-, (+/-)- [CAS]	31677-93-7 34911-55-2	US 4425363	Antidepressant	Depression, general
<b>Buramate</b>		4663-83-6			
buserelin	Luteinizing hormone-releasing factor (pig), 6-[O-(1,1-dimethylethyl)-D-serine]-9-(N-ethyl-L-prolinamide)-10-deglycinamide- [CAS]	57982-77-1 68630-75-1	GB 1523623	Releasing hormones	Cancer, prostate
buspirone	8-Azaspiro[4.5]decane-7,9-dione, 8-[4-[4-(2-pyrimidinyl)-1-piperazinyl]butyl]-[CAS]	36505-84-7	EP 276536	Anxiolytic	Anxiety, general
busulfan	1,4-Butanediol, dimethanesulfonate [CAS]	55-98-1		Formulation, optimized, microparticles	Cancer, general
busulfan	1,4-Butanediol, dimethanesulfonate- [CAS]	55-98-1		Formulation, parenteral, other	Cancer, leukaemia, acute myelogenous
<b>Butabarbital</b>		143-81-7			
<b>Butacaine</b>		149-16-6			
<b>Butacetin</b>		2109-73-1			
<b>Butalamine</b>		22131-35-7			
<b>Butalbital</b>		77-26-9			
<b>Butallylonal</b>		1142-70-7			
butamben	4-Aminobenzoic acid butyl ester [CAS]	94-25-7		Formulation, modified-release, other	Pain, cancer
butamirate	Benzeneacetic acid, Alpha-ethyl-, 2-[2-(diethylamino)ethoxy]ethylester, 2-hydroxy-1,2,3-propanetricarboxylate (1:1) [CAS]	18109-80-3 18109-81-4		Antitussive	Cough
<b>Butanillicaine</b>		3785-21-5			
<b>Butaperazine</b>		653-03-2			
<b>Butaverine</b>		55837-14-4			
<b>Butazolamide</b>		16790-49-1			
<b>Butedronic Acid</b>		51395-42-7			



Table IV

API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
butenafine	1-Naphthalenemethanamine, N-((4-(1,1-dimethylethyl)phenyl)methyl)-N-methyl- [CAS]	101827-46-7 101828-21-1	EP 164697	Antifungal	Infection, dermatological
<b>Butethal</b>		77-28-1			
<b>Butethamate</b>		14007-64-8			
<b>Butethamine</b>		2090-89-3			
<b>Buthalital</b>		510-90-7			
<b>Butthiazide</b>		2043-38-1			
<b>Butibufen</b>		55837-18-8			
<b>Butidrine</b>		1506-12-3			
butobendine	benzoic acid, 3,4,5-trimethoxy-, 1,2-ethanediylbis[(methylimino)(2-ethyl-2,1-ethanediyl)] ester, [S-(R*,R*)]- [CAS]	55769-64-7 55769-65-8	US 4021473	Antiarrhythmic	Arrhythmia, general
butoconazole	1H-Imidazole, 1-[4-(4-chlorophenyl)-2-[[2,6-dichlorophenyl]thio]butyl]-, (+/-)- [CAS]	64872-76-0 64872-77-1	GB 1567431	Antifungal	Infection, Candida, general
<b>Butoctamide</b>		32838-26-9			
<b>Butofilolol</b>		64552-17-6			
butorphanol	Morphinan-3,14-diol, 17-(cyclobutylmethyl)-, [S-(R*,R*)]-2,3-dihydroxybutanedioate (1:1) (salt) [CAS]	42408-82-2 58786-99-5	GB 1412129	Analgesic, other	
<b>Butoxycaine</b>		3772-43-8			
<b>Butriptyline</b>		35941-65-2			
<b>Butropium</b>		29025-14-7			
<b>Buzepide</b>		3691-21-2			
BVT-5182			WO 0208178	Anorectic/Antiobesity	Obesity
BXT-51072	2H-1,2-Benzoselenazine, 3,4-dihydro-4,4-dimethyl- [CAS]	173026-17-0		GI inflammatory/bowel disorders	Colitis, ulcerative
C-1311	6H-Imidazo[4,5,1-de]acridin-6-one, 5-[[2-(diethylamino)ethyl]amino]-8-hydroxy-, 2HCl, 2H2O				
cabergoline	Ergoline-8-carboxamide, N-[3-(dimethylamino)propyl]-N-[[[ethylamino]carbonyl]-6-(2-propenyl)]-, (8S)- [CAS]	81409-90-7 85329-89-1	GB 2103603	Anticancer, other	Cancer, general
				Antiprolactin	Galactorrhoea

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Cabergoline		81409-90-7			
Cacodylic Acid		75-60-5			
Cactinomycin		8052-16-2			
cadexomer iodine	Cadexomer iodine [CAS]	94820-09-4		Anti-infective, other	Ulcer, venostasis
Cadmium Salicylate		19010-79-8			
Cadralazine		64241-34-5			
Cafaminol		30924-31-3			
caffeine	1,2,3-Propanetricarboxylic acid, 2-hydroxy mixt. with 3,7-dihydro-1,3,7-trimethyl-1H-purine-2,6-dione [CAS]	69-22-7 58-08-2		Respiratory	Apnoea
Calcifediol		19356-17-3			
Calcipotriene		112965-21-6			
calcipotriol	9,10-Secochola-5,7,10(19),22-tetraene-1,3,24-triol, 24-cyclopropyl-, (1 $\alpha$ ,3 $\beta$ ,5 $\gamma$ ,7 $\epsilon$ ,22 $\epsilon$ )- [CAS]	112965-21-6	WO 8700834	Antipsoriasis	Psoriasis
calcipotriol+beclometasone	9,10-Secochola-5,7,10(19),22-tetraene-1,3,24-triol, 24-cyclopropyl-, (1 $\alpha$ ,3 $\beta$ ,5 $\gamma$ ,7 $\epsilon$ ,22 $\epsilon$ ) + Pregna-1,4-diene-3,20-dione, 9-chloro-11 $\beta$ ,17,21-trihydroxy-16 $\beta$ -methyl, 17,21-dipropionate			Formulation, fixed-dose combinations	Psoriasis
calcitriol	9,10-Secocholesta-5,7,10(19)-triene-1,3,25-triol, (1 $\alpha$ ,3 $\beta$ ,5 $\gamma$ ,7 $\epsilon$ )- [CAS]	32222-06-3		Antipsoriasis	Psoriasis
Calcium 3-Aurothio-2-propanol-1-sulfonate		5743-29-3			
Calcium Acetylsalicylate		69-46-5			
Calcium		33659-28-8			
Bromolactobionate					
Calcium Carbonate		471-34-1			
Calcium Gluconate		299-28-5			
Calcium		27214-00-2			
Glycerophosphate					

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
calcium hopantothenate	Calcium D-(+)-4-(2,4-dihydroxy-3,3-dimethylbutyramido)butyrate (hemihydrate) [CAS]	17097-76-6	EP 117260	Neurological	Attention deficit disorder
<b>Calcium Iodobehenate</b>		1319-91-1			
<b>Calcium Iodostearate</b>		1301-16-2			
<b>Calcium Lactate</b>		814-80-2			
<b>Calcium Levulinate</b>		591-64-0			
<b>Calcium Mesoxalate</b>		21085-60-9			
<b>Calcium N-Carbamoylaspartate</b>		16649-79-9			
calcium polycarbophil	Polycarbophil, calcium salt- [CAS]	126040-58-2		GI inflammatory/bowel disorders-	Irritable bowel syndrome
<b>Calcium Propionate</b>		9003-97-8			
<b>Calcium Succinate</b>		4075-81-4			
		140-99-8			
caldaret	5-methyl-2-(1-piperazinyl)-benzenesulfonic acid monohydrate				
<b>Calusterone</b>		133804-44-1		Cardio stimulant	Heart failure
<b>Camazepam</b>		17021-26-0			
		36104-80-0			
camostat	Benzeneacetic acid, 4-[[4-[(aminoiminomethyl)amino]benzoyl]oxy]-, 2-(dimethylamino)-2-oxoethyl ester, monomethanesulfonate [CAS]	59721-28-7 59721-29-8 71079-09-9	US 4021472	GI inflammatory/bowel disorders	Pancreatitis
<b>Camphor</b>		76-22-2			
<b>Camphotamide</b>		4876-45-3			
camptothecin	4-Ethyl-4-hydroxy-1H-pyrano-[[3'4':6,7]indolizinol[1,2-b:]quinoline-3,14(4H,12H)-dione				
<b>Candesartan</b>		139481-59-7		Formulation, optimized, microemulsion	Cancer, general
candesartan cilexetil	1H-Benzimidazole-7-carboxylic acid, 2-ethoxy-1-[[2'-(1H-tetrazol-5-yl)][1,1'-biphenyl]-4-yl]methyl]-, 1-[[[(cyclohexyloxy)carbonyl]oxy]ethyl ester, (+/-)- [CAS]	145040-37-5	EP 520423	Antihypertensive, renin system	Hypertension, general
<b>Candoxatril</b>		123122-55-4			

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canertinib	N-[4-(3-(chloro-4-fluoro-phenylamino)-7-(3-morpholin-4-yl-propoxy)-quinazolin-6-yl]-acrylamide	289499-45-2		Anticancer, other	Cancer, lung, non-small cell
Canrenone		976-71-6			
Cantharidin		56-25-7			
canluzumab mertansine	Maytansine, N2-deacetyl-N2-(3-mercapto-1-oxopropyl)-, conjugated humanized C242 monoclonal antibody	139504-50-0		Immunotoxin	Cancer, colorectal
capecitabine	Cytidine, 5-deoxy-5-fluoro-N-[(pentyloxy)carbonyl]- [CAS]	154361-50-9	EP 602454	Anticancer, antimetabolite	Cancer, breast
Capobenic Acid		21434-91-3			
capravirine	1H-imidazole-2-methanol, 5-(3,5-dichlorophenyl)thio-4-(1-methylethyl)-1-(4-pyridinyl)methyl carbamate (ester) [CAS]	178979-85-6		Antiviral, anti-HIV	Infection, HIV/AIDS
Capromab		151763-64-3			
capsaicin cream	N-[(4-hydroxy-3-methoxyphenyl)methyl]-8-methyl-, (E)- [CAS]	404-86-4		Formulation, dermal, topical	Pain, post-herpetic
Captodiamine		486-17-9			
captopril	L-Proline, 1-(3-mercapto-2-methyl-1-oxopropyl)-, (S)- [CAS]	62571-86-2	US 4105776	Antihypertensive, renin system	Hypertension, general
captopril + HCTZ	L-Proline, 1-(3-mercapto-2-methyl-1-oxopropyl)-, (S)-, mixt. with 6-chloro-3,4-dihydro-2H-1,2,4-benzothiazine-7-sulfonamide 1,1-dioxide [CAS]	110075-07-5	US 4217347	Antihypertensive, renin system	
Capuride		5579-13-5			
carabersat	Benzamide, N-(6-acetyl-3,4-dihydro-3-hydroxy-2,2-dimethyl-2H-1-benzopyran-4-yl)-4-fluoro, (3R-trans)- [CAS]	184653-84-7	WO 9811890	Antiepileptic	Epilepsy, general
Caramiphen		77-22-5			
carazolol	2-Propanol, 1-(9H-carbazol-4-yloxy)-3-[(1-methylethyl)amino]- [CAS]	57775-29-8	DE 2240599	Antihypertensive, adrenergic	
Carbachol		51-83-2			
carbamazepine	5H-Dibenz[b,f]azepine-5-carboxamide [CAS]	298-46-4		Formulation, modified-release, other	Epilepsy, general

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Carbamide Peroxide		124-43-6			
Carbarsone		121-59-5			
Carbaryl		63-25-2			
Carbazochrome		13051-01-9			
		51460-26-5			
carbendazim	Methyl-2-benzimidazolecarbamate			Anticancer, other	Cancer, general
Carbenicillin		4697-36-3			
Carbenoxolone		5697-56-3			
Carbetapentane		77-23-6			
Carbicarb	Carbonic acid disodium salt, mixt. with monosodium salt- [CAS]	72227-05-5		Alimentary/Metabolic, other	Acidosis
Carbidopa		28860-95-9			
	S-Alpha Hydrazino-3,4-dihydroxy-Alpha methyl benzene propanoic acid monohydrate +3-hydroxy-L-tyrosine			Formulation, fixed-dose combinations	Parkinson's disease
carbidopa+levodopa-1					
Carbimazole		22232-54-8			
Carbinoxamine		486-16-8			
Carbocloral		541-79-7			
		151756-26-2			
carbocysteine		638-23-3	EP 546272	Cystic fibrosis treatment	Cystic fibrosis
Carbon Tetrachloride		56-23-5			
	Platinum, diammine[1,1-cyclobutanedicarboxylato(2-)]-, (SP-4-2)- [CAS]	41575-94-4		Anticancer, alkylating	Cancer, ovarian
carboplatin		35700-23-3			
Carboprost					
	Prosta-5,13-dien-1-oic acid, 9,11,15-trihydroxy-15-methyl-, [(5Z,9.alpha.,11Alpha,13E,15S)-, compd. with 2-amino-2-(hydroxymethyl)-1,3-propanediol(1:1) [CAS]	58551-69-2			
carboprost trometamol		74849-93-7	US 3728382	Prostaglandin	Abortion
	2,5-Cyclohexadiene-1,4-dione, 2-[2-[(aminocarbonyloxy)-1-methoxyethyl]-3,6-bis(1-aziridinyl)-5-methyl- [CAS]				
Carboquone		24279-91-2	DE 1905224	Anticancer, antibiotic	
Carbromal		77-65-6			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Carbubarb		960-05-4			
Carbutamide		339-43-5			
Carbuterol		34866-47-2			
Carfimate		3567-38-2			
carglumic acid	N-Carbamoyl-L-glutamic acid	1188-38-1		Metabolic and enzyme disorders	Hyperammonaemia
Cargutocin		33605-67-3			
Carindacillin		35531-88-5			
cariporide	Benzamide, N-(aminoininomethyl)-4-(1-methylethyl)-3-(methylsulfonyl)- [CAS]	159138-80-4 159138-81-5	EP 589336	Antianginal	Angina, general
Cariporide		159138-80-4			
Carisoprodol		78-44-4			
carmofur	1(2H)-Pyrimidinecarboxamide, 5-fluoro-N-hexyl-3,4-dihydro-2,4-dioxo- [CAS]	61422-45-5	US 4071519	Anticancer, antimetabolite	
Carmoxirole		98323-83-2			
carmustine	Urea, N,N'-bis(2-chloroethyl)-N-nitroso- [CAS]	154-93-8		Formulation, implant	Cancer, brain
Carnitine		461-06-3			
Caroverine		23465-76-1			
Caroxazone		18464-39-6			
Carphenazine		2622-30-2			
Carpipramine		5942-95-0			
carprofen	9H-Carbazole-2-acetic acid, 6-chloro-Alpha-methyl-, (+/-)- [CAS]	53716-49-7	US 3896145	Anti-inflammatory	
Carsalam		2037-95-8			
carteolol	2(1H)-Quinolinone, 5-[3-[(1,1-dimethylethyl)amino]-2-hydroxypropoxy]-3,4-dihydro-, monohydrochloride [CAS]	51781-06-7 51781-21-6	US 3910924	Antihypertensive, adrenergic	Glaucoma
Carticaine		23964-58-1			
Carubicin		50935-04-1			
Carumonam		87638-04-8			
Carvacrol		499-75-2			
carvedilol	2-Propanol, 1-(9H-carbazol-4-yloxy)-3-[[2-(2-methoxyphenoxy)ethyl]amino]-[CAS]	72956-09-3	EP 4920	Antihypertensive, adrenergic	Hypertension, general



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Carvone Cascarillin	Pneumocandin B0, 1-((4R,5S)-5-((2-aminoethyl)amino)-N2-(10,12-dimethyl-1-oxotetradecyl)-4-hydroxy-L-ornithine)-5-(threo-3-hydroxy-L-ornithine)-, diacetate (salt) [CAS]	99-49-0			
		10118-56-6			
caspofungin		162808-62-0 179463-17-3	WO 9421677	Antifungal	Infection, Aspergillus
Catechin		154-23-4			
cathepsin K inhibitors	N-(1-benzothien-2-ylcarbonyl)-N-[2-(2-fluorophenyl)-4-oxo-1,2,3,4-tetrahydropyrimidin-5-yl]-L-leucinamide				
	N-(1-benzothien-2-ylcarbonyl)-N-[2-(2-fluorophenyl)-4-oxo-1,2,3,4-tetrahydropyrimidin-5-yl]-L-leucinamide		WO 9613523	Osteoporosis treatment	Osteoporosis
cathepsin S inhibitors				Antiasthma	Asthma
CC-401			US 6342595	Immunosuppressant	Arthritis, rheumatoid
CCI-779	Rapamycin 42-(3-hydroxy-2-(hydroxymethyl)-2-methylpropanoate) [CAS]	162635-04-3		Anticancer, antibiotic	Cancer, renal
CCR5 antagonists			WO 9732019	Antiviral, anti-HIV	Infection, HIV/AIDS
CDC-394			US 634061	Anticancer, other	Cancer, myeloma
CDC-801			US 5605914	GI inflammatory/bowel disorders	Crohn's disease
CEE-03-310	1H-3-Benzazepin-7-ol, 5-(2,3-dihydro-7-benzofuranyl)-2,3,4,5-tetrahydro-3-methyl-8-nitro, (5S)- [CAS]	128022-68-4	EP 347672	Dependence treatment	Addiction, alcohol
cefaclor	5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[aminophenylacetyl]amino]-3-chloro-8-oxo-, [6R-[6Alpha,7beta(R*)]]- [CAS]	53994-73-3 70356-03-5			Infection, Haemophilus influenzae prophylaxis
	5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[amino(4-hydroxyphenyl)acetyl]amino]-3-methyl-8-oxo-, [6R-[6Alpha,7beta(R*)]]- [CAS]	50370-12-2 66592-87-8	GB 1240687	Cephalosporin, oral	Infection, general
cefadroxil	5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[aminophenylacetyl]amino]-3-methyl-8-oxo-, [CAS]	105879-42-3 15686-71-2	US 4775751	Cephalosporin, oral	Infection, respiratory tract, upper
cefalexin					

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
cefalexin pivoxil	5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[aminophenylacetyl]amino]-3-methyl-8-oxo-, (2,2-dimethyl-1-oxopropoxy)methyl ester, monohydrochloride, [6R-[6Alpha,7beta(R*)]]- [CAS]	27726-31-4		Cephalexosporin, oral	Infection, general
	7-D-mandelamido-3[[[(1-methyl-1H-tetrazol-5-yl)thio]methyl]-3-cephem-4-carboxylic acid				
cefamandole	5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[amino(4-hydroxyphenyl)acetyl]amino]-8-oxo-3-[[[(1H-1,2,3-triazol-4-ylthio)methyl]-, [6R-[6Alpha,7beta(R*)]]- [CAS]	51627-14-6	GB 1460914	Cephalexosporin, oral	Infection, general
cefatrizine		56187-47-4			
Cefazedone		25953-19-9			
Cefazolin		76610-84-9			
Cefbuperazone	7beta-[(Z)-2-(2-amino-4-thiazolyl)-2-pentenylamino]-3-carbamoyloxymethyl-3-cephem-4-carboxylic acid, pivaloyloxymethyl ester HCl- [CAS]	105889-45-0 105889-46-1	GB 2173194	Cephalexosporin, oral	Infection, respiratory tract, general
cefcapene pivoxil		105239-91-6			
Cefclidin					
cefdinir	5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[[(2-amino-4-thiazolyl)(hydroxymino)acetyl]amino]-3-ethenyl-8-oxo-, [6R-[6Alpha,7beta(Z)]]- [CAS]	91832-40-5	EP 105459	Cephalexosporin, oral	Infection, dermatological
	5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[[(2-amino-4-thiazolyl)(methoxymino)acetyl]amino]-3-[2-(4-methyl-5-thiazolyl)ethenyl]-8-oxo-, (2,2-dimethyl-1-oxopropoxy)methyl ester, [6R-[3(Z),6Alpha,7beta(Z)]]- [CAS]	104145-95-1 104146-53-4 117467-28-4	JP 61178991	Cephalexosporin, oral	Infection, general
cefditoren pivoxil					

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
cefepime	Pyrrolidinium, 1-[[7-[[[(2-amino-4-thiazolyl)(methoxyimino)acetyl]amino]-2-carboxy-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-en-3-yl]methyl]-1-methyl-, hydroxide, inner salt, [6R-[6Alpha,7beta(Z)]]- [CAS]	107648-80-6 123171-59-5 88040-23-7	EP 531981	Cephalosporin, injectable	Infection, respiratory tract, lower
		65052-63-3			
Cefetamet	5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[[(2-amino-4-thiazolyl)(methoxyimino)acetyl]amino]-3-methyl-8-oxo-, (2,2-dimethyl-1-oxopropoxy)methyl ester, monohydrochloride, [6R-[6Alpha,7beta(Z)]]-[CAS]	111696-23-2	GB 1581854	Cephalosporin, oral	Infection, general
cefetamet pivoxil	5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[[(2-amino-4-thiazolyl)((carboxymethoxy)imino)acetyl]amino]-3-ethenyl-8-oxo-, [6R-[6Alpha,7beta(Z)]]- [CAS]	79350-37-1	EP 30630	Cephalosporin, oral	Infection, general
		65085-01-0 75738-58-8	GB 1536281		
cefmenoxime	5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[[(2-amino-4-thiazolyl)(methoxyimino)acetyl]amino]-3-[[[(1-methyl-1H-tetrazol-5-yl)thio]methyl]-8-oxo-, [6R-[6Alpha,7beta(Z)]]- [CAS]	56796-20-4 56796-39-5	GB 1449420	Cephalosporin, injectable	Infection, general
cefmetazole	5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[[(2-amino-2-carboxyethyl)thio]acetyl]amino]-7-methoxy-3-[[[(1-methyl-1H-tetrazol-5-yl)thio]methyl]-8-oxo-, (6R-cis)- [CAS]	84305-41-9	EP 24879	Cephalosporin, injectable	Infection, urinary tract
cefminox					

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
cefodizime	5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[[(2-amino-4-thiazolyl)(methoxyimino)acetyl]amino]-3-[[[5-(carboxymethyl)-4-methyl-2-thiazolyl]thio]methyl]-8-oxo-, [6R-[6Alpha,7beta(Z)]]- [CAS]	69739-16-8 86329-79-5	US 4590267	Cephalosporin, injectable	Infection, respiratory tract, lower
	5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[[(hydroxyphenylacetyl)amino]-8-oxo-3-[[[1-(sulfomethyl)-1H-tetrazol-5-yl]thio]methyl]-, disodium salt, [6R-[6Alpha,7beta(R*)]]- [CAS]	61270-78-8 61270-58-4	GB 1547473	Cephalosporin, injectable	Infection, general
cefoperazone cefoperazone + sulbactam <b>Ceforanide</b>	5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[[(4-ethyl-2,3-dioxo-1-piperazinyl)carbonyl]amino](4-hydroxyphenyl)acetyl]amino]-3-[[[(1-methyl-1H-tetrazol-5-yl)thio]methyl]-8-oxo-, [6R-[6Alpha,7beta(R*)]]- [CAS]	62893-19-0 92739-15-6 60925-61-3	GB 1508071 US 4234579	Cephalosporin, injectable Antibiotic, other	Infection, general Infection, general
	5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[[(2-amino-4-thiazolyl)(methoxyimino)acetyl]amino]-3-[[[2,3-dihydro-2-(2-hydroxyethyl)-3-imino-1H-pyrazol-1-yl]methyl]-8-oxo-, [6R-[6Alpha,7beta(Z)]]	122841-12-7 122841-10-5	EP 307804	Cephalosporin, injectable	Infection, general
	(6R,7R)-7-[[[(2-amino-4-thiazolyl)(methoxyimino)acetyl]amino]cephalosporanic acid sodium salt	64485-93-4 63527-52-6 69712-56-7	GB 1580621	Cephalosporin, injectable	Infection, general
cefotetan	5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[[(2-amino-4-thiazolyl)acetyl]amino]-3-[[[1-[2-(dimethylamino)ethyl]-1H-tetrazol-5-yl]thio]methyl]-8-oxo-, (6R-trans)- [CAS]	61622-34-2 66309-69-1	US 4080498	Cephalosporin, injectable	Infection, general

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
cefotiam hexetil	1-(cyclohexyloxy)carbonyloxyethyl 7β-[2-(2-aminothiazol-4-yl)acetamido]-3-[[[1-(2-dimethylaminoethyl)-1H-tetrazol-5-yl]thio]methyl]ceph-3-em-4-carboxylate 2HCl [CAS]	95789-30-3	EP 128029	Cephalosporin, oral	Infection, respiratory tract, lower
	5-Thia-1-azabicyclo(4.2.0)oct-2-ene-2-carboxylic acid, 3-(((aminocarbonyloxy)methyl)-7-methoxy-8-oxo-7-((2-thienylacetyl)amino)-, monosodium salt, (6R-cis)- [CAS]	33564-30-6 35607-66-0	GB 1348984	Cephalosporin, oral	Infection, general
cefoxitin	Imidazo[1,2-b]pyridazinium, 1-[[7-[[[(5-amino-1,2,4-thiadiazol-3-yl)(methoxyimino)acetyl]amino]-2-carboxy-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-en-3-yl]methyl]-, hydroxide, inner salt, [6R-[6Alpha,7β(Z)]]- [CAS]	113359-04-9	EP 203271	Cephalosporin, injectable	Infection, general
	Pyridinium, 1-[[2-carboxy-7-[[[(5-carboxy-1H-imidazol-4-yl)carbonyl]amino]phenylacetyl]amino]-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-en-3-yl]methyl]-4-(2-sulfoethyl)-, hydroxide, inner salt, [6R-[6Alpha,7β(R*)]]- [CAS]	84880-03-5 85287-61-2	EP 60028	Cephalosporin, injectable	Infection, respiratory tract, general
cefpimizole	5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[[(4-hydroxy-6-methyl-3-pyridinyl)carbonyl]amino](4-hydroxyphenyl)acetyl]amino]-3-[[[(1-methyl-1H-tetrazol-5-yl)thio]methyl]-8-oxo-, [6R-[6Alpha,7β(R*)]]- [CAS]	70797-11-4	US 4156724	Cephalosporin, injectable	Infection, general
	5H-1-Pyridinium, 1-[[7-[[[(2-amino-4-thiazolyl)(methoxyimino)acetyl]amino]-2-carboxy-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-en-3-yl]methyl]-6,7-dihydro-, hydroxide, inner salt, [6R-[6Alpha,7β(Z)]]- [CAS]	84957-29-9 98753-19-6	EP 64740	Cephalosporin, injectable	Infection, respiratory tract, lower
Cefpodoxime Proxetil		87239-81-4			

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cefprozil	5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[amino(4-hydroxyphenyl)acetyl]amino]-8-oxo-3-(1-propenyl)-, [6R-[6Alpha,7beta(R*)]]- [CAS]	92665-29-7 121123-17-9	GB 2173798	Cephalosporin, oral	Infection, dermatological
	5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[amino-1,4-cyclohexadien-1-ylacetyl]amino]-3-methoxy-8-oxo-, [6R-[6Alpha,7beta(R*)]]- [CAS]	51762-05-1	GB 1435111	Cephalosporin, oral	Infection, general
	Pyridinium, 4-(aminocarbonyl)-1-[[2-carboxy-8-oxo-7-[[phenylsulfoacetyl]amino]-5-thia-1-azabicyclo[4.2.0]oct-2-en-3-yl]methyl]-, hydroxide, inner salt, [6R-[6Alpha,7beta(R*)]]- [CAS]	52152-93-9 62587-73-9	GB 1387656	Cephalosporin, injectable	Infection, pseudomonal
ceftazidime <b>Cefteram</b> <b>Ceftezole</b>	Pyridinium, 1-[[7-[[[(2-amino-4-thiazolyl)](1-carboxy-1-methylethoxy)imino]acetyl]amino]-2-carboxy-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-en-3-yl]methyl]-, hydroxide, inner salt, [6R-[6Alpha,7beta(Z)]]- [CAS]	72558-82-8 82547-58-8 26973-24-0	GB 2025398	Cephalosporin, injectable	Infection, respiratory tract, upper
cefibuten	5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[2-(2-amino-4-thiazolyl)-4-carboxy-1-oxo-2-butenyl]amino]-8-oxo-, [6R-[6Alpha,7beta(Z)]]- [CAS]	97519-39-6	EP 136721	Cephalosporin, oral	Infection, respiratory tract, lower
	5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[[(2-amino-4-thiazolyl)(methoxyimino)acetyl]amino]-8-oxo-, [6R-[6Alpha,7beta(Z)]]- [CAS]	68401-81-0 68401-82-1	GB 1600735	Cephalosporin, injectable	Infection, general



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cefprozime alapivoxil	5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[[2-[(2-amino-1-oxopropyl)amino]-4-thiazolyl](methoxyimino)acetyl]amino]-8-oxo-, (2,2-dimethyl-1-oxopropoxy)methyl ester, monohydrochloride, [6R-[6Alpha,7beta(Z,S')]]- [CAS]	113812-94-5 135767-36-1	JP 62209112	Cephalosporin, oral	Infection, general
	5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[[2-amino-4-thiazolyl](methoxyimino)acetyl]amino]-8-oxo-3-[[[1,2,5,6-tetrahydro-2-methyl-5,6-dioxo-1,2,4-triazin-3-yl]thio]methyl]-, [6R-[6Alpha,7beta(Z)]]- [CAS]	73384-59-5 74578-69-1	GB 2022090	Cephalosporin, injectable	Infection, respiratory tract, lower
ceftriaxone	5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 3-[[[[(aminocarbonyl)oxy]methyl]-7-[[2-furanyl(methoxyimino)acetyl]amino]-8-oxo-1-(acetyloxy)ethyl ester, [6R-[6Alpha,7beta(Z)]]- [CAS]	15686-71-2 64544-07-6	GB 1571683	Cephalosporin, oral	Infection, respiratory tract, upper
cefuroxime axetil	5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 3-[[[[(aminocarbonyl)oxy]methyl]-7-[[2-furanyl(methoxyimino)acetyl]amino]-8-oxo-, [6R-[6Alpha,7beta(Z)]]- [CAS]	55268-75-2 56238-63-2	GB 1453049	Cephalosporin, injectable	Infection, general
Cefuzonam	Benzenesulfonamide, 4-(5-(4-methylphenyl)-3-(trifluoromethyl)-1H-pyrazol-1-yl)- [CAS]	82219-78-1			
celecoxib	Butanoic acid, octahydro-1,7,8-trihydroxy-6-indoliziny ester, [1S-(1Alpha,6beta,7beta,8beta,8abeta)]- [CAS]	169590-42-5	US 5760068	Antiarthritic, other	Arthritis, rheumatoid
celgosivir	Urea, N'-[3-acetyl-4-[3-[(1,1-dimethylethyl)amino]-2-hydroxypropoxy]phenyl]-N,N-diethyl- [CAS]	121104-96-9	US 5017563	Antiviral, other	Infection, hepatitis virus, general
celiprolol	Urea, N'-[3-acetyl-4-[3-[(1,1-dimethylethyl)amino]-2-hydroxypropoxy]phenyl]-N,N-diethyl- [CAS]	56980-93-9 57470-78-7	GB 1441359	Antihypertensive, adrenergic	Angina, unstable
Cellulose Ethyl Hydroxyethyl Ether		9004-58-4			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Centchroman	9,12-Epoxy-1H-diindolo[1,2,3-fg:3',2',1'-kl]pyrrolo[3,4-i][1,6]benzodiazocine-10-carboxylic acid, 5,16-bis((ethylthio)methyl)-2,3,9,10,11,12-hexahydro-10-hydroxy-9-methyl-1-oxo-, methyl ester, (9S,10R,12R)-[CAS]	31477-60-8			
CEP-1347	9,12-Epoxy-1H-diindolo[1,2,3-fg:3',2',1'-kl]pyrrolo[3,4-i][1,6]benzodiazocine-1-one, 2,3,9,10,11,12-hexahydro-10-hydroxy-10-(hydroxymethyl)-9-methyl-, (9S,10S,12R)-[CAS]	156177-65-0	WO 9731002	Antiparkinsonian	Parkinson's disease
CEP-701		111358-88-4		Anticancer, antimetabolite	Cancer, prostate
Cephacetrile		23239-41-0			
Cephaeline		483-17-0			
Cephalexin		15686-71-2			
Cephaloglycin		3577-1-3			
Cephaloridine		50-59-9			
Cephalosporin C		61-24-5			
Cephalothin		153-61-7			
Cephapirin		24356-60-3			
Cephradine		38821-53-3			
Cerivastatin		145599-86-6			
Ceronapril		111223-26-8			
certoparin	Heparin [CAS]	9005-49-6		Anticoagulant	Thrombosis, venous
Ceruletide		17650-98-5			
Cerviprost	Prosta-5,13-dien-1-olic acid, 11,15-dihydroxy-9-oxo-, (5Z,11Alpha,13E,-15S)-[CAS]	363-24-6		Formulation, dermal, topical	
Cetalkonium		122-18-9			
Cetamolol		34919-98-7			
Cethexonium		1794-74-7			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
cethromycin	2H-Oxacyclopentadecino(4,3-d)oxazole-2,6,8,14(1H,7H,9H)-trione 4-ethyloctahydro-3a,7,9,11,13,15-hexamethyl-11-((3-(3-quinolinyl)-2-propenyl)oxy)-10-((3,4,6-trideoxy-3-(dimethylamino)-β-D-xylohexapyranosyl)oxy)-(3aS,4R,7R,9R,10R,11R,13R,15R,15aR)-[CAS]	205110-48-1	EP 929563	Macrolide antibiotic	Infection, respiratory tract, general
<b>Cetiedil</b>		14176-10-4			
<b>Cetirizine</b>		83881-51-0			
	Acetic acid, [2-[4-[(4-chlorophenyl)phenylmethyl]-1-piperazinyl]ethoxy]-, [CAS]	83881-51-0			
cetirizine		83881-52-1	EP 58146	Antiallergic, non-asthma	Allergy, general
	Acetic acid, [2-[4-[(4-chlorophenyl)phenylmethyl]-1-piperazinyl]ethoxy]-, dihydrochloride, Benzenemethanol, Alpha-[1-(methylamino)ethyl]-, hydrochloride, [S-(R <sup>*</sup> R <sup>*</sup> )]-	83881-52-1		Formulation, optimized, microencapsulate	Allergy, general
cetirizine+pseudoephedrine		90-82-4			
<b>Cetotiamine</b>		137-76-8			
<b>Cetoxime</b>		25394-78-9			
	Benzenepropanoic acid, 4-[[[4-(aminomethyl)cyclohexyl]carbonyl]oxy]-, trans-[CAS]	27724-96-5			
cetaxate		34675-84-8	JP 48075547	Antilucer	
<b>Cetrimonium</b>		57-09-0			
<b>Cetorelix</b>		120287-85-6			
<b>Cetyl dimethylethylamm onium</b>		124-03-8			
<b>Cetylpyridinium</b>		123-03-5			
	Spiro[1-azabicyclo[2.2.2]octane-3,5'-[1,3]oxathiolane], 2'-methyl-, cis- [CAS]	107220-27-9			
cevimeline		107233-08-9	EP 205247	Stomatological	Sjogren's syndrome
	7-phenyl-2,4,6-heptatrienylhydroxamic acid			Anticancer, other	Cancer, general
CG-1521					
<b>Chaulmoogric Acid</b>		29106-32-9			
<b>Chenodiol</b>		474-25-9			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
CHF-3381			EP 951465	Analgasic, other	Pain, neuropathic
Chlophedianol		791-35-5			
Chloracizine		800-22-6			
		302-17-0			
chloral	1,1-Ethanediol, 2,2,2-trichloro- [CAS]	2218-68-0			
		515-82-2		Formulation, transmucosal, systemic	Insomnia
Chlorambucil		305-03-3			
Chloramine-B		127-52-6			
Chloramine-T		127-65-1			
Chloraminophenamide		121-30-2			
Chloramphenicol		56-75-7			
Chlorazaniil		500-42-5			
Chlorbenzoxamine		522-18-9			
Chlorbetamide		97-27-8			
Chlorcyclizine		82-93-9			
Chlordantoin		5588-20-5			
Chlordiazepoxide		58-25-3			
Chlorguanide		500-92-5			
Chlorhexadol		3563-58-4			
chlorhexidine	2,4,11,13-Tetraazatetradecanedimide, N,N'-bis(4-chlorophenyl)-3,12-dilimino- [CAS]	55-56-1			
Chlorisondamine		69-27-2		Formulation, other	Xerostomia, Periodontitis
Chlormadinone		302-22-7			
Chlormerodrin		62-37-3			
Chlormezanone		80-77-3			
Chlormidazole		3689-76-7			
Chlornaphazine		494-03-1			
Chloroazodin		502-98-7			
Chlorophyll		1406-65-1			
Chloroprednisone		52080-57-6			
Chloroprocaine		3858-89-7			
Chloropyramine		59-32-5			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Chloroquine		54-05-7			
Chlorothen		148-65-2			
Chlorothiazide		58-94-6			
Chlorotrianisene		569-57-3			
Chloroxine		773-76-2			
Chloroxylenol		88-04-0			
Chlorozotocin		54749-90-5			
chlorphenamine	2-Pyridinepropanamine, Gamma-(4-chlorophenyl)-N,N-dimethyl- [CAS]	132-22-9		Formulation, modified-release, other	Allergy, general
Chlorphenesin		104-29-0			
		886-74-8			
Chlorpheniramine		132-22-9			
Chlorphenoxamide		3576-64-5			
Chlorphenoxamine		77-38-3			
Chlorphentermine		461-78-9			
Chlorproethazine		84-01-5			
Chlorproguanil		537-21-3			
chlorproguanil + dapsone	4,4'-Sulfonyldianiline + 1-(3,4-Dichlorophenyl)5-isopropylbiguanide	537-21-3 80-08-0		Antimalarial	Infection, malaria
Chlorpromazine		50-53-3			
Chlorpropamide		94-20-2			
Chlorprothixene		113-59-7			
Chlorquinaldol		72-80-0			
Chlortetracycline		57-62-5			
Chlorthalidone		77-36-1			
Chlorthenoxazin(e)		132-89-8			
Chlorzoxazone		95-25-0			
Cholic Acid		81-25-4			
Choline		67-48-1			
		2016-36-6			
		28319-77-9			

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choline theophyllinate	Ethanaminium, 2-hydroxy-N,N,N-trimethyl-, salt with 3,7-dihydro-1,3-dimethyl-1H-purine-2,6-dione (1:1) [CAS]	4499-40-5		Formulation, modified-release, other	
	Ethanaminium, 2-[[[2,3-dihydroxypropoxy]hydroxyphosphinyloxy]-N,N,N-trimethyl-, hydroxide, inner salt, (R)-] [CAS]	28319-77-9	JP 55028955	Cognition enhancer	Amnesia
		4940-39-0			
		804-10-4			
choline-L-alfoscerate		532-82-1			
<b>Chromocarb</b>					
<b>Chromonar</b>					
<b>Chrysoidine</b>					
CHS-828	Guanidine, N-[6-(4-chlorophenoxy)hexyl]-N'-cyano-N"-4-pyridinyl- [CAS]	200484-11-3	US 5696140	Anticancer, other	Cancer, general
CI-1031	Glycine, N-[2-[5-(aminoiminomethyl)-2-hydroxyphenoxy]-6-[3-(4,5-dihydro-1-methyl-1H-imidazol-2-yl)phenoxy]-3,5-difluoro-4-pyridinyl]-N-methyl- [CAS]	183305-24-0	WO 9638421	Antianginal	Angina, unstable
CI-1040	Benzamide, 2-[(2-chloro-4-iodophenyl)amino]-N-(cyclopropylmethoxy)-3,4-difluoro- [CAS]	212631-79-3	WO 9837881	Anticancer, other	Cancer, general
cibenzoline	1H-Imidazole, 2-(2,2-diphenylcyclopropyl)-4,5-dihydro- [CAS]	53267-01-9	GB 1417174	Antiarrhythmic	Arrhythmia, general
ciclesonide	Pregna-1,4-diene-3,20-dione 16,17-((cyclohexylmethylene)bis(oxy))-11-hydroxy-21-(2-methyl-1-oxopropoxy) (11 $\beta$ ,16 $\alpha$ ) [CAS]	126544-47-6	DE 4129535	Antiasthma	Asthma
cicletanine	Furo[3,4-c]pyridin-7-ol, 3-(4-chlorophenyl)-1,3-dihydro-6-methyl-, (+/-)- [CAS]	82747-56-6			
ciclonicate	3-Pyridinecarboxylic acid, 3,3,5-trimethylcyclohexyl ester, trans- [CAS]	89943-82-8	US 4383998	Antihypertensive, other	
ciclopirox	2(1H)-Pyridinone, 6-cyclohexyl-1-hydroxy-4-methyl-, [CAS]	53449-58-4	DE 1910481	Vasodilator, peripheral	Cancer, lung, small cell
<b>Ciclosidomine</b>		41621-49-2			
		29342-05-0	US 3883545	Antifungal	Infection, fungal, general
		66564-16-7			



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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
ciclosporin A	Ciclosporin A- [CAS]	59865-13-3		Formulation, optimized, microemulsion	Transplant rejection, general
cidofovir	Phosphonic acid, [[2-(4-amino-2-oxo-1(2H)-pyrimidinyl)-1-(hydroxymethyl)ethoxy]methyl]-, (S)- [CAS]	113852-37-2	EP 253412	Antiviral, other	Infection, cytomegalovirus
<b>Cifenline</b>		53267-01-9			
cilansetron	4H-Pyrido[3,2,1-jk]carbazol-11(8H)-one, 5,6,9,10-tetrahydro-10-[[2-methyl-1H-imidazol-1-yl]methyl]-, (R)- [CAS]	120635-74-7	EP 297651	GI inflammatory/bowel disorders	Irritable bowel syndrome
<b>Cilastatin</b>		82009-34-5			
cilazapril	6H-Pyridazinol[1,2-a][1,2]diazepine-1-carboxylic acid, 9-[[1-(ethoxycarbonyl)-3-phenylpropyl]amino]octahydro-10-oxo-, [1S-[1Alpha,9Alpha(R*)]]- [CAS]	88768-40-5 90139-06-3	GB 2128984	Antihypertensive, renin system	Hypertension, general
cilengitide	Cyclo(L-arginylglycyl-L-Alpha-aspartyl-D-phenylalanyl-N-methyl-L-valyl) [CAS]	188968-51-6	EP 770622	Anticancer, other	Cancer, lung, non-small cell
clinidipine	3,5-Pyridinedicarboxylic acid, 1,4-dihydro-2,6-dimethyl-4-(3-nitrophenyl)-, 2-methoxyethyl 3-phenyl-2-propenyl ester- [CAS]	102106-21-8 132203-70-4	EP 161877	Antihypertensive, other	Hypertension, general
cilomilast	Cis-4-cyano-4-[3-(cyclopentyloxy)-4-methoxyphenyl]cyclohexane-1-carboxylic acid	153259-65-5	US 5602157	COPD treatment	Chronic obstructive pulmonary disease
cilostazol	2(1H)-Quinolinone, 6-[4-(1-cyclohexyl-1H-tetrazol-5-yl)butoxy]-3,4-dihydro-[CAS]	73963-72-1	GB 2033893	Antithrombotic	Peripheral vascular disease
<b>Cimetidine</b>		51481-61-9			
cimetropium	3-Oxa-9-azoniatricyclo[3.3.1.0 <sup>2,4</sup> ]nonane, 9-(cyclopropylmethyl)-7-(3-hydroxy-1-oxo-2-phenylpropoxy)-9-methyl-, [7(S)-(1Alpha,2B,4B,5Alpha,7B)]-[CAS]	51598-60-8	US 3853886	Antispasmodic	Muscle spasm, general
cinacalcet	1-naphthalenemethanamine, Alpha-methyl-N-[3-[3-(trifluoromethyl)phenyl]propyl]-, (AlphaR)-	364782-34-3		Hormone	Hyperparathyroidism

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Cinchonidine		485-71-2			
Cinchonine		118-10-5			
Cinchophen		132-60-5			
Cinepazet		23887-41-4			
Cinepazide		23887-46-9			
cinepazide	Piperazine, 1-[2-oxo-2-(1-pyrrolidinyl)ethyl]-4-[1-oxo-3-(3,4,5-trimethoxyphenyl)-2-propenyl]-, (Z)-2-butenedioate (1:1) [CAS]	26328-04-1	GB 1218591	Vasodilator, peripheral	Peripheral vascular disease
Cinitapride		66564-14-5			
Cinmetacin		20168-99-4			
Cinnamedrine		90-86-8			
Cinnarizine		298-57-7			
cinolazepam	1H-1,4-Benzodiazepine-1-propanenitrile, 7-chloro-5-(2-fluorophenyl)-2,3-dihydro-3-hydroxy-2-oxo- [CAS]	75696-02-5	DE 2950235	Hypnotic/Sedative	Insomnia
cinoxacin	[1,3]Dioxolo[4,5-g]cinnoline-3-carboxylic acid, 1-ethyl-1,4-dihydro-4-oxo-[CAS]	28657-80-9	GB 1296753	Quinolone antibacterial	Infection, urinary tract
Cinoxate		104-28-9			
Cinromide		58473-74-8			
Cioteronel		89672-11-7			
cipamfylline	1H-Purine-2,6-dione, 8-amino-1,3-bis(cyclopropylmethyl)-3,7-dihydro- [CAS]	132210-43-6	EP 389282	Antipruritic/inflamm, allergic	Eczema, atopic
cipralisant	1H-Imidazole, 4-[(1R,2R)-2-(5,5-dimethyl-1-hexynyl)cyclopropyl]- [CAS]	213027-19-1	US 6008240	Psychostimulant	Attention deficit disorder
ciprofibrate	Propanoic acid, 2-[4-(2,2-dichlorocyclopropyl)phenoxy]-2-methyl-[CAS]	52214-84-3	GB 1385828	Hypolipaeamic/Antiatherosclerosis	Hyperlipidaemia, general
ciprofloxacin	3-Quinolonecarboxylic acid, 1-cyclopropyl-6-fluoro-1,4-dihydro-4-oxo-7-(1-piperazinyl)-[CAS]	85721-33-1	US 4670444	Quinolone antibacterial	Infection, general

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
ciprofloxacin+fluocinolone,SAL	3-Quinolincarboxylic acid, 1-cyclopropyl-6-fluoro-1,4-dihydro-4-oxo-7-(1-piperazinyl)- + (6Alpha, 11Beta, 16Alpha)-6,9-Difluoro-11,21-dihydroxy-16,17-[(1-methylethylidene)bis-(oxy)]-pregna-1,4-diene-3,20-dione			Formulation, fixed-dose combinations	Otitis
<b>Ciramadol</b>		63269-31-8			
cisapride	Benzamide, 4-amino-5-chloro-N-[1-[3-(4-fluorophenoxy)propyl]-3-methoxy-4-piperidinyl]-2-methoxy-, cis- [CAS]	81098-60-4	EP 76530	Gastroprokinetic	
cisatracurium	Isoquinolinium, 2,2'-[1,5-pentanediy]bis[oxy(3-oxo-3,1-propanediyl)]bis[1-[(3,4-dimethoxyphenyl)methyl]-1,2,3,4-tetrahydro-6,7-dimethoxy-2-methyl-, [1R-[1Alpha,2Alpha(1'R*,2'R*)]]-, [CAS]	96946-42-8	US 5453510	Muscle relaxant	Surgery adjunct
cisplatin	Platinum, diamminedichloro-, (SP-4-2)-[CAS]	15663-27-1	US 4177263	Anticancer, alkylating	
citalopram	5-Isobenzofurancarboxonitrile, 1-[3-(dimethylamino)propyl]-1-(4-fluorophenyl)-1,3-dihydro- [CAS]	59729-32-7 59729-33-8	GB 1526331	Antidepressant	Depression, general
citicoline	Cytidine 5-(trihydrogen diphosphate), P-[2-(trimethylammonio)ethyl]ester, hydroxide, inner salt [CAS]	987-78-0	JP 39006541	Cognition enhancer	Infarction, cerebral
<b>Cititolone</b>		1195-16-0			
<b>Citric Acid</b>		77-92-9			
<b>Citrulline</b>		372-75-8			
cizolirtine	Ethanamine, N,N-dimethyl-2-[(1-methyl-1H-pyrazol-5-yl)phenylmethoxy]-, 2-hydroxy-1,2,3-propanetricarboxylate [CAS]	142155-44-0		Urological	Incontinence
CJ-13610	4-(3-[4-(2-Methyl-imidazol-1-yl)-phenylsulfanyl]-phenyl)-tetrahydro-pyran-4-carboxylic acid amide			COPD treatment	Chronic obstructive pulmonary disease

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
CKD-602	1H-Pyrano[3',4':6,7]indolizino[1,2-b]quinoline-3,14(4H,12H)-dione, 4-ethyl-4-hydroxy-11-[2-[(1-methylethyl)amino]ethyl]-, monohydrochloride, (4S)- [CAS]	213819-48-8	WO 9902530	Anticancer, other	Cancer, ovarian
cladribine	Adenosine, 2-chloro-2'-deoxy- [CAS]	4291-63-8	EP 173059	Anticancer, antimetabolite	Cancer, leukaemia, hairy cell
<b>Clanobutin</b>		30544-61-7			
clarithromycin	Erythromycin, 6-O-methyl- [CAS]	81103-11-9	EP 41355	Macrolide antibiotic	Infection, respiratory tract, lower
<i>Clavulanate, Disodium</i>					
<b>Clavulanic Acid</b>		58001-44-8			
<b>Clebopride</b>		55905-53-8			
<b>Clemastine</b>		15686-51-8			
<b>Clemizole</b>		442-52-4			
<b>Clenbuterol</b>		37148-27-9			
<b>Clentiazem</b>		96125-53-0			
clevudine	3,5-Pyridinedicarboxylic acid, 4-(2,3-dichlorophenyl)-1,4-dihydro-2,6-dimethyl-, methyl (1-oxobutoxy)methyl ester ( $\pm$ ) [CAS]	167221-71-8	WO 9512578	Antihypertensive, other	Hypertension, general
clevudine	2,4(1H,3H)-Pyrimidinedione, 1-(2-deoxy-2-fluoro- $\beta$ -L-arabinofuranosyl)-5-methyl- [CAS]	163252-36-6		Antiviral, other	Infection, hepatitis-B virus
<b>Clidanac</b>		28968-07-2			
<b>Clidinium</b>		3485-62-9			
<b>Clinafloxacin</b>		105956-97-6			
<b>Clindamycin</b>		18323-44-9			
clindamycin + tretinoin	L-threo-Alpha-D-galacto-Octopyranoside, methyl 7-chloro-6,7,8-trideoxy-6-[[[(1-methyl-4-propyl-2-pyrrolidiny)carbonyl]amino]-1-thio-, (2S-trans)- + retinoic acid			Formulation, fixed-dose combinations	Acne

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clindamycin	L-Threo-Alpha-D-galacto-octopyranoside, methyl 7-chloro-6,7,8-trideoxy-6-[[[(1-methyl-4-propyl-2-pyrrolidinyl)carbonyl]amino]-1-thio-, 2-(dihydrogen phosphate), (2S-trans)-	18323-44-9 24729-96-2		Formulation, parenteral, other	Infection, gynaecological
<b>Clinofibrate</b>		30299-08-2			
<b>Clinprost</b>		88931-51-5			
clobazam	1H-1,5-Benzodiazepine-2,4(3H,5H)-dione, 7-chloro-1-methyl-5-phenyl- [CAS]	22316-47-8	GB 1214662	Anxiolytic	
<b>Clobenfurol</b>		3611-72-1			
<b>Clobenoside</b>		29899-95-4			
<b>Clobenzepam</b>		1159-93-9			
<b>Clobenzorex</b>		13364-32-4			
<b>Clobenztropine</b>		5627-46-3			
clobetasol	Pregna-1,4-diene-3,20-dione, 21-chloro-9-fluoro-11,17-dihydroxy-16-methyl-, (11 $\beta$ ,16 $\beta$ )- [CAS]	25122-41-2		Formulation, dermal, topical	Psoriasis
clobetasone	Pregna-1,4-diene-3,11,20-trione, 21-chloro-9-fluoro-16-methyl-17-(1-oxobutoxy)-, (16 $\beta$ )- [CAS]	25122-57-0 54063-32-0	GB 1253831	Antipruritic/inflamm, allergic	
<b>Clobutinol</b>		14860-49-2			
<b>Clocapramine</b>		47739-98-0			
<b>Clocinazine</b>		298-55-5			
<b>Cloconazole</b>		77175-51-0			
<b>Clocortolone</b>		4828-27-7			
clodronate	Phosphonic acid, (dichloromethylene)bis- [CAS]	22560-50-5		Osteoporosis treatment, Anticancer, hormonal	Pain, cancer, Hypercalcaemia of malignancy
<b>Clodronic Acid</b>		10596-23-3			
clofarabine	2-chloro-9-(2-deoxy-2-fluoro- $\beta$ -D-arabinofurasonyl)adenine			Anticancer, antimetabolite	Cancer, leukaemia, chronic lymphocytic

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clofazimine	3-(p-chloroanilo)-10-(p-chlorophenyl)-2,10-dihydro-2-(isopropylimino)-phenazine	2030-63-9		Formulation, optimized, microencapsulate	Infection, tuberculosis
Clofenamide		671-95-4			
Clofibrate		637-07-0			
Clofibril Acid		882-09-7			
Cloflucarban		369-77-7			
Clofoctol		37693-01-9			
Cloforex		14261-75-7			
Clomacran		5310-55-4			
Clomestrone		4091-75-2			
Clometacin		25803-14-9			
Clomethiazole		533-45-9			
Clometocillin		1926-49-4			
Clomiphene		911-45-5			
Clomipramine		303-49-1			
Clomocycline		1181-54-0			
clonazepam	2H-1,4-Benzodiazepin-2-one, 5-(2-chlorophenyl)-1,3-dihydro-7-nitro- [CAS]	1622-61-3	US 4316897	Antiepileptic	Epilepsy, general
clonidine	1H-Imidazol-2-amine, N-(2,6-dichlorophenyl)-4,5-dihydro- [CAS]	4205-90-7	US 4060084	Formulation, transdermal, patch	Hypertension, general
Clonitazene		3861-76-5			
Clonitrate		2612-33-1			
Clonixin		17737-65-4			
Cloпамide		636-54-4			
Clopenthixol		982-24-1			
Cloperastine		3703-76-2			
clopidogrel	Thieno[3,2-c]pyridine-5(4H)-acetic acid, Alpha-(2-chlorophenyl)-6,7-dihydro-, methyl ester, (S)- [CAS]	120202-48-4 90055-48-4 113665-84-2	EP 99802	Antithrombotic	Infarction, myocardial
Clopirac		42779-82-8			
Cloprednol		5251-34-3			
cloranolol	2-Propanol, 1-(2,5-dichlorophenoxy)-3-[[1,1-dimethylethyl]amino]- [CAS]	39563-28-5 54247-25-5	US 4310549	Antihypertensive, adrenergic	



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Clorazepic Acid		23887-31-2			
Clorexolone		2127-1-7			
cloricromene	Acetic acid, [[8-chloro-3-[2-(diethylamino)ethyl]-4-methyl-2-oxo-2H-1-benzopyran-7-yl]oxy]-, ethyl ester [CAS]	68206-94-0	US 4349566	Vasodilator, coronary	Peripheral vascular disease
Clorindione		1146-99-2			
Clorprenaline		3811-25-4			
Clortermine		10389-73-8			
Clospirazine		24527-27-3			
Clostebol		1093-58-9			
Clothiapine		2058-52-8			
clotiazepam	2H-Thieno[2,3-e]-1,4-diazepin-2-one, 5-(2-chlorophenyl)-7-ethyl-1,3-dihydro-1-methyl- [CAS]	33671-46-4	US 3849405	Anxiolytic	Anxiety, general
clotrimazole	1-[(2-chlorophenyl)diphenylmethyl]-1H-imidazole	23593-75-1	US 3705172	Antifungal	
clotrimazole + betamethasone	Pregna-1,4-diene-3,20-dione, 9-fluoro-11-hydroxy-16-methyl-17,21-bis(1-oxopropoxy)-, (11 $\beta$ , 16 $\beta$ )-, mixt. with 1-[(2-chlorophenyl)diphenylmethyl]-1H-imidazole [CAS]	92522-91-3		Formulation, fixed-dose combinations	Infection, fungal, general
Cloxacinil		61-72-3			
cloxazolam	Oxazolo[3,2-d][1,4]benzodiazepin-6(5H)-one, 10-chloro-11b-(2-chlorophenyl)-2,3,7,11b-tetrahydro- [CAS]	24166-13-0	US 3772371	Anxiolytic	
Cloxotestosterone		53608-96-1			
Cloxyquin		130-16-5			
clozapine	5H-Dibenzo[b,e][1,4]diazepine, 8-chloro-11-(4-methyl-1-piperazinyl)- [CAS]	5786-21-0	US 3539573	Neuroleptic	Schizophrenia
CMI-392	Trans-2-[3-methoxy-4-(2-p-chlorophenylthio)ethoxy-5-(N'-methyl-N'-hydroxyureidyl)methylphenyl]-5-(3,4,5-trimethoxyphenyl)tetrahydrofuran	193739-23-0	US 5648486	Antipsoriasis	Psoriasis

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CMT-3	2-Naphthacene-carboxamide, 1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-1,11-dioxo-, (4aS,5aR,12aS)- [CAS]	15866-90-7	US 5837696	Anticancer, other	Cancer, sarcoma, Kaposi's
CNI-1493	Decanediamide, N,N'-bis[3,5-bis[1-[(aminoiminomethyl)hydrazono]ethyl]phenyl]-, tetrahydrochloride [CAS]	164301-51-3	US 5750573	Anti-inflammatory	Psoriasis
CNS-5161	N'-[2-chloro-5-(methylthio)phenyl]-N-methyl-N-[3-(methylthio)phenyl]guanidine [CAS]	160754-76-7	WO 9427591	Analgesic, other	Pain, neuropathic
Cobamamide		13870-90-1			
Cocaethylene		529-38-4			
Cocaine		50-36-2			
Codeine		76-57-3			
		52-28-8			
CoFactor	5,10 methylene - tetrahydrofolate			Anticancer, antimetabolite	Cancer, colorectal
Colchicine		64-86-8			
	1-Hexanaminium, N,N,N-trimethyl-6-(2-propenylamino)-, polymer with (chloromethyl)oxirane, 2-propen-1-amine and N-2-propenyl-1-decanamine, hydrochloride [CAS]				
colesevelam		182815-44-7	US 5607669	Hypolipaeic/Antiatherosclerosis	Hyperlipidaemia, general
colestilan	1H-Imidazole, 2-methyl-, polymer with (chloromethyl)oxirane [CAS]	95522-45-5	JP 59155421	Hypolipaeic/Antiatherosclerosis	Hypercholesterolaemia
Colestipol		26658-42-4			
colforsin daropate	6-(3-dimethylaminopropionyl)forskolin- [CAS]	138605-00-2	EP 222413	Cardio stimulant	Heart failure
colfosceril	3,5,9-Trioxa-4-phosphapentacosan-1-aminium, 4-hydroxy-N,N,N-trimethyl-10-oxo-7-[(1-oxohexadecyl)oxy]-, hydroxide, inner salt, 4-oxide, (R)- [CAS]	63-89-8 99732-49-7	US 4826821	Lung Surfactant	Respiratory distress syndrome, infant
Collagraft		138331-02-9		Formulation, implant	Regeneration, bone
Colocynthin		1398-78-3			
Colpormon		1247-71-8			

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coluracetam	1-Pyrrolidineacetamide, 2-oxo-N-(5,6,7,8-tetrahydro-2,3-dimethylfuro[2,3-b]quinolin-4-yl)- [CAS]	135463-81-9	EP 427636	Cognition enhancer	Alzheimer's disease
combretastatin A-4 prodrug compound B, Pharmacor	disodium combretastatin-A-4-3-O-phosphate			Anticancer, other	Cancer, thyroid
			US 6362165	Antiviral, anti-HIV	Infection, HIV/AIDS
convaptin	[1,1'-Biphenyl]-2-carboxamide, N-[4-[(4,5-dihydro-2-methylimidazo[4,5-d][1-benzazepin-6(1H)-yl)carbonyl]phenyl]-, [CAS]	168626-94-6	WO 9503305	GI inflammatory/bowel disorders	Hyponatraemia
Connettivina	Hyaluronic acid [CAS]	9004-61-9		Vulnery	
<b>Convallatoxin</b>		508-75-8			
<b>Coparaffinate</b>		8001-60-3			
Corticorelin Ovine Trifluate					
<b>Corticosterone</b>		50-22-6			
<b>Cortisone</b>		53-06-5			
<b>Cortivazol</b>		1110-40-3			
<b>Cosyntropin</b>		16960-16-0			
<b>Cotarnine</b>		82-54-2			
<b>Cotinine</b>		486-56-6			
	Benzenesulfonamide, 4-amino-N-2-pyrimidinyl-, mixt. with 5-[(3,4,5-trimethoxyphenyl)methyl]-2,4-pyrimidinediamine [CAS]	39474-58-3		Trimethoprim and analogues	Infection, urinary tract
co-trimazine		4366-18-1			
<b>Coumetarol</b>	1H-Indene-3-acetamide, 5-fluoro-2-methyl-N-(phenylmethyl)-1-[(3,4,5-trimethoxyphenyl)methylene]-, (1Z)-[CAS]	200803-37-8	WO 9747303	Anticancer, other	Barrett's oesophagus
CP-248			US 5948779	Anticancer, other	Cancer, prostate
CP-461					
CPC-211	Acetic acid, dichloro-, sodium salt [CAS]	2156-56-1		Neuroprotective	Acidosis, lactic
CPI-1189	CPI 1189 [CAS]	210475-67-5	WO 9631462	Cognition enhancer	Dementia, AIDS-related
CRA-0450			WO 0202549	Anxiolytic	Unspecified

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
creatinol-O-phosphate	Guanidine, N-methyl-N-[2-(phosphonoxy)ethyl]- [CAS]	6903-79-3		Antianginal	
CRL-5861	Oxirane, methyl-, polymer with oxirane, block [CAS]	106392-12-5	US 4837014	Antisickling	Anaemia, sickle cell
crobenetine	(2R,6S)-3-[2(S)-Benzyloxypropyl]-6,11,11-trimethyl-1,2,3,4,5,6,-hexahydro-2,6-methano-3-benzazocin-10-ol		WO 9914199	Neuroprotective	Ischaemia, cerebral
croconazole	1H-Imidazole, 1-[1-[2-[(3-chlorophenyl)methoxy]phenyl]ethenyl]- [CAS]	77175-51-0	DE 3021467	Antifungal	Infection, fungal, general
cromoglicic acid	4H-1-Benzopyran-2-carboxylic acid, 5,5'-[(2-hydroxy-1,3-propanediyl)bis(oxy)]bis4-oxo- [CAS]	53736-52-0		Formulation, mucosal, topical	Conjunctivitis
cromolyn	4H-1-Benzopyran-2-carboxylic acid, 5,5'-[(2-hydroxy-1,3-propanediyl)bis(oxy)]bis[4-oxo-, [CAS]	15826-37-6 16110-51-3		Formulation, inhalable, solution	Asthma
Cropropamide		633-47-6			
Crotamiton		483-63-6			
Crotethamide		6168-76-9			
Crystacide			US 4557935	Formulation, dermal, topical	Infection, dermatological
CS-502			EP 799823	Analgesic, other	Pain, general
CS-758	4-[(1E,3E)-4-[trans-5-[[1R,2R)-2-(2,4-difluorophenyl)-2-hydroxy-1-methyl-3-(1H-1,2,4-triazol-1-yl)propyl]thio]-1,3-dioxan-2-yl]-1,3-butadienyl]-3-fluorobenzonitrile			Antifungal	Infection, fungal, general
CS-834	1-Azabicyclo[3.2.0]hept-2-ene-2-carboxylic acid, 6-[(1R)-1-hydroxyethyl]-4-methyl-7-oxo-3-[[[(3R)-5-oxo-3-pyrrolidinyl]thio]-, (2,2-dimethyl-1-oxopropoxy)methyl ester, (4R,5S,6S)- [CAS]	157542-49-9	EP 599512	Beta-lactam antibiotic	Infection, general

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CT-052923	[[[2H-benzo[d]1,3-dioxalan-5-methyl]amino][4-(6,7-dimethoxyquinazolin-4-yl)piperazinyl]methane-1-thione			Cardiovascular	Restenosis
CT-32228	N-(4-bromophenyl)-6-(5-chloro-2-methylphenyl)-[1,3,5]triazine-2,4-diamine			Anticancer, other	Cancer, general
Cupric Citrate		866-82-0			
Cuproxoline		13007-93-7			
CVT-2584	Ethanol, 2,2'-[[6-[[[4-methoxyphenyl)methyl]amino]-9-(1-methylethyl)-9H-purin-2-yl]imino]bis-[CAS]	199986-75-9	WO 9805335	Cardiovascular	Restenosis
CX-659S	((S)-6-amino-5-(6-hydroxy-2,5,7,8-tetramethylchroman-2-carboxamido)-3-methyl-1-phenyl-2,4-(1H,3H)-pyrimidinedione				
Cyacetacide		140-87-4		Dermatological	Eczema, general
Cyamemazine		3546-03-0			
Cyanidin		528-58-5			
CYC400			WO 00172745	Anticancer, other	Cancer, general
Cyclacillin		3485-14-1			
Cyclandelate		456-59-7			
Cyclazocine		3572-80-3			
Cyclexanone		15301-52-7			
Cyclexedrine		532-52-5			
cyclidrol	3-Cyclohexene-1-methanol, 5-hydroxy-				
cyclin D1 inhibitors	Alpha,Alpha,4-trimethyl- [CAS]	498-71-5		COPD treatment, Respiratory	Bronchitis, chronic
Cyclizine			US 6033843	Anticancer, hormonal	Cancer, breast
Cyclobarbitol		82-92-8			
Cyclobendazole		52-31-3			
		31431-43-3			

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cyclobenzaprine	1-Propanamine, 3-(5H-dibenzo[a,d]cyclohepten-5-ylidene)-N,N-dimethyl-[CAS]	303-53-7		Formulation, modified-release, other	Muscle spasm, general
Cyclobutylol		512-16-3			
Cyclocumarol		518-20-7			
Cyclodrine		52109-93-0			
Cyclofenil		2624-43-3			
Cycloguanil		516-21-2			
Cyclomethycaine		139-62-8			
Cyclonium iodide		6577-41-9			
Cyclopentamine		102-45-4			
Cyclopentthiazide		742-20-1			
Cyclopentobarbital		76-68-6			
Cyclopentolate		512-15-2			
cyclophosphamide	N,N-Bis(2-chloroethyl)tetrahydro-2H-1,3,2-oxazaphosphorin-2-amine-2-oxide monohydrate	50-18-0 6055-19-2		Formulation, parenteral, targeted	Cancer, general
cyclopiroxalamine	2-(1H)-Pyridinone, 6-cyclohexyl-1-hydroxy-4-methyl-, compd with 2-aminoethanol(1:1) [CAS]	41621-49-2		Formulation, transdermal, other	Vaginitis
Cycloserine		68-41-7			
Cyclothiazide		2259-96-3			
Cyclovalone		579-23-7			
Cymar		508-77-0			
cymserine	Carbamic acid, [4-(1-methylethyl)phenyl]-, (3aS,8aR)-1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethylpyrrolo[2,3-b]indol-5-yl ester [CAS]	145209-39-8	WO 9902154	Cognition enhancer	Alzheimer's disease
Cynarin(e)		30964-13-7	US 6063606	Dermatological	Unspecified
CYP26 inhibitors					
Cyproheptadine		129-03-3			
cyproterone	(1 $\beta$ ,2 $\beta$ )-6-Chloro-1,2-dihydro-17-hydroxy-3H-cyclopropa[1,2]pregna-1,4,6-triene-3,20-dione [CAS]	2098-66-0		Radio/chemoprotective	Chemotherapy-induced injury, general



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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Cysteamine		60-23-1			
cystic fibrosis ther	[[4-[[3-[[4-[1-(4-hydroxyphenyl)-1-methyl-ethyl]phenoxy]methyl]phenyl]methoxy]-phenyl]iminomethyl]-, ethyl ester			Cystic fibrosis treatment	Cystic fibrosis
cytarabine	2(1H)-Pyrimidinone, 4-amino-1-[5-O-[hydroxy(octadecyloxy)phosphinyl]-β-D-arabinofuranosyl]-, [CAS]	65093-40-5 147-94-4	EP 239015	Anticancer, antimetabolite	Myelodysplastic syndrome
D-24851	N-(Pyridin-4-yl)-(1-(4-chlorobenzyl)-indol-3-yl)-glyoxyl-amide			Anticancer, other	Cancer, general
D-4418	8-Methoxyquinoline-5-[N-(2,5-dichloropyridin-3-yl)]carboxamide			Antiasthma	Asthma
DA-5018	Benzeneacetamide, 4-(2-aminoethoxy)-N-(3-(3,4-dimethylphenyl)propyl)-3-methoxy-, monohydrochloride [CAS]	174661-97-3	US 5242944	Analgesic, other	Pain, musculoskeletal
DA-6034			US 6025387	GI inflammatory/bowel disorders	Crohn's disease
DA-7867			KR 9957803	Antibacterial, other	Infection, general
DA-7911			KR 56034	Antiarthritic, other	Arthritis, rheumatoid
DA-8159	3-(1-Methyl-7-oxo-3-propyl-6,7-dihydro-1H-pyrazolo-[4,3-d]pyrimidin-5-yl)-N-[2-(1-methylpyrrolidin-2-yl)ethyl]-4-propoxybenzenesulfonamide				Sexual dysfunction, male, general
Dacarbazine		4342-3-4	KR 353014	Male sexual dysfunction	
Daclizumab		152923-56-3			
Dactinomycin		50-76-0			
dalbavancin	5,31-Dichloro-38-de(methoxycarbonyl)-7-demethyl-19-deoxy-56-O-[2-deoxy-2-(10-methylundecanamido)-β-D-glucopyranuronyl]-38-[N-[3-(dimethylamino)propyl]carbamoyl]-42-O-(Alpha-D-mannopyranosyl)-N15-methylristomycin A aglycone	171500-79-1		Peptide antibiotic	Infection, dermatological

Table IV

API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Dalfopristin	Virginiamycin M1, 26-((2-(diethylamino)ethyl)sulfonyl)-26,27-dihydro-2,26R,27S)-, mixt with 4-(4-(dimethylamino)-N-methyl-L-phenylalanine)-5-(5-((1-azabicyclo(2.2.2)oct-3-ylthio)methyl)-4-oxo-L-2-piperidinecarboxylic acid) virginiamycin S1- [CAS]	112362-50-2			
dalfopristin + quinupristin	Heparin-, [CAS]	126602-89-9	EP 248703	Antibiotic, other	Infection, respiratory tract, general
dalteparin		9041-08-1	US 4303651	Anticoagulant	Thromboprophylaxis
Daltroban		79094-20-5			
δ-Aminolevulinic Acid		106-60-5			
danaparoid			EP 66908	Anticoagulant	Thrombosis, venous
danazol	Pregna-2,4-dien-20-yno[2,3-d]isoxazol-17-ol, (17Alpha)- [CAS]	17230-88-5	GB 905844	Menstruation disorders	
Danthron		117-10-2			
Dantrolene		7261-97-4			
dapiprazole	1,2,4-Triazolo[4,3-a]pyridine, 5,6,7,8-tetrahydro-3-[2-[4-(2-methylphenyl)-1-piperazinyl]ethyl]- [CAS]	72822-12-9 72822-13-0	US 4252721	Ophthalmological	Glaucoma
dapivirine	4-[[4-(2,4,6-trimethylphenyl)amino]pyrimidin-2-yl]amino]benzonitrile	244767-67-7		Antiviral, anti-HIV	Infection, HIV/AIDS
dapoxetine	(+)-(S)-N,N-dimethyl-Alpha-[2-(1-naphthyl-oxy)ethyl]benzylamine HCl	119356-77-3	EP 288188	Male sexual dysfunction	Premature ejaculation
dapsone	4,4'-Sulfonyldianiline	80-08-0		Formulation, dermal, topical	Acne
daptomycin	Daptomycin [CAS]	103060-53-3	EP 178152	Peptide antibiotic	Infection, dermatological
Darbepoetin Alfa					
darifenacin	3-Pyrrolidineacetamide, 1-[2-(2,3-dihydro-5-benzofuranyl)ethyl]-Alpha,Alpha-diphenyl-, (S)- [CAS]	133099-04-4	EP 388054	Urological	Overactive bladder

Table IV

API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
daunorubicin	5,12-Naphthacenedione, 8-acetyl-10-[(3-amino-2,3,6-trideoxy-Alpha-L-lyxohexopyranosyl)oxy]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methoxy-, (8S-cis)-[CAS]	20830-81-3	US 5441745	Formulation, optimized, liposomes	Cancer, sarcoma, Kaposi's
DAX, SciClone	3-diallyl-8-cyclohexylxanthine			Cystic fibrosis treatment	Cystic fibrosis
DB-67	7-tert-Butyldimethylsilyl-10-hydroxycamptothecin			Anticancer, other	Cancer, general
d-Camphocarboxylic Acid		18530-30-8			
DCF-987	Dextran		US 5514665	Formulation, other	Cystic fibrosis
DDT		50-29-3			
Deaminoxycytosine		113-78-0			
Deanol		108-01-0			
Debrisoquin		1131-64-2			
Decamethonium		541-22-0			
Decimemide		14817-09-5			
decitabine	1,3,5-Triazin-2(1H)-one, 4-amino-1-(2-deoxy-beta-D-erythro-pentofuranosyl)-[CAS]	23339-46-0 2353-33-5		Anticancer, antimetabolite	Myelodysplastic syndrome
declopramide	Benzamide, 4-amino-3-chloro-N-(2-(diethylamino)ethyl)- [CAS]	891-60-1	WO 9732582	Anticancer, other	Cancer, colorectal
Deferiprone		30652-11-0			
Deferoxamine		70-51-9			
deflazacort	5'H-Pregna-1,4-dieno[17,16-d]oxazole-3,20-dione, 21-(acetyloxy)-11-hydroxy-2-methyl-, (11B,16B)- [CAS]	14484-47-0 74712-90-6	GB 1077393	Hormone	Asthma
Defosfamide		3733-81-1			

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degarelix	N-acetyl-3-(naptalen-2-yl)-D-alanyl-4-chloro-D-phenylalanyl-3-(pyridin-3-yl)-D-alanyl-L-seryl-4-[[[(4S)-2,6-dioxohexahydropyrimidin-4-yl]carbonyl]amino]-L-phenylalanyl-4-(carbamoylamino)-D-phenylalanyl-L-leucyl-N6-(1-methylethyl)-L-lysyl-L-prolyl-D-alaninamide	214766-78-6		Anticancer, hormonal	Cancer, prostate
dehydroascorbic acid	L-threo-2,3-Hexodululosonic acid gamma-lactone	490-83-5		Cognition enhancer	Alzheimer's disease
Dehydrocholic Acid		81-23-2			
Dehydroemetine		4914-30-1			
delapril	Glycine, N-(2,3-dihydro-1H-inden-2-yl)-N-[N-[1-(ethoxycarbonyl)-3-phenylpropyl]-L-alanyl]-, (S)- [CAS]	83435-66-9 83435-67-0	EP 51391	Antihypertensive, renin system	Hypertension, general
delapril+manidipine	Glycine, N-(2,3-dihydro-1H-inden-2-yl)-N-[N-[1-(ethoxycarbonyl)-3-phenylpropyl]-L-alanyl]-, (S)-3,5-Pyridinedicarboxylic acid, 1,4-dihydro-2,6-dimethyl-4-(3-nitrophenyl)-2-[4-(diphenylmethyl)-1-piperazinyl]ethyl methyl ester [CAS]		FR 2733911	Formulation, fixed-dose combinations	Hypertension, general
delavirdine	Piperazine, 1-[3-[(1-methylethyl)amino]-2-pyridinyl]-4-[[5-[(methylsulfonyl)amino]-1H-indol-2-yl]carbonyl]- [CAS]	136817-59-9	WO 9109849	Antiviral, anti-HIV	Infection, HIV/AIDS
Delmadinone		13698-49-2			
Delmopinol		79874-76-3			
delorazepam	2H-1,4-Benzodiazepin-2-one, 7-chloro-5-(2-chlorophenyl)-1,3-dihydro- [CAS]	2894-67-9	CH 408029	Anxiolytic	
delucemine	3,3-Bis-(m-fluorophenyl)-N-methylpropylamine [CAS]	186495-99-8		Neuroprotective	Ischaemia, cerebral
Demanyl		6909-62-2			
Demecarium		56-94-0			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
demeclocycline	2-Naphthacene-carboxamide, 7-chloro-4-(dimethylamino)-1,4,4a,5,5a,6,11,12a-octahydro-3,6,10,12,12a-pentahydroxy-1,11-dioxo-, [4S- (4 $\alpha$ ,4a $\alpha$ ,5a $\alpha$ ,6 $\beta$ ,12a $\alpha$ )]-[CAS]	127-33-3		Formulation, modified-release, $\leq 24$ hr	Infection, general
Demecolcine		477-30-5			
Demegestone		10116-22-0			
Demexiptiline		24701-51-7			
denaverine	Benzeneacetic acid, $\alpha$ -(2-ethylbutoxy)- $\alpha$ -(phenyl)-, 2-(dimethylamino)ethyl ester, [CAS]	3321-06-0	DE 4133785	Analgesic, NSAID	Pain, musculoskeletal
Denileukin Diftitox		173146-27-5			
Denopamine		71771-90-9			
Denopterin		22006-84-4			
Deoxycholic Acid		83-44-3			
Deoxycorticosterone		64-85-7			
		56-47-3			
Deoxydihydrostreptomycin		26086-49-7			
Deoxyepinephrine		501-15-5			
Depreotide		161982-62-3			
depsiptide	L-Valine, N-[(3S,4E)-3-hydroxy-7-mercapto-1-oxo-4-heptenyl]-D-valyl-D-cysteiny-(2Z)-2-amino-2-butenoyl-, (4-1)-lactone, cyclic (1-2)-disulfide [CAS]	128517-07-7	EP 352646	Anticancer, antibiotic	Cancer, general
Deptropine		604-51-3			
Dequalinium		522-51-0			
dersalazine	Benzoic acid, 2-hydroxy-5-[4-{3-[4-(2-methyl-1H-imidazol[4,5-c]pyridin-1-yl)methyl]-1-piperidinyl}-3-oxo-1-phenyl-1-propenyl]phenylazo] (Z) [CAS]	188913-57-7 188913-58-8	US 5747477	Anti-inflammatory	Colitis, ulcerative
Deserpidine		131-01-1			

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desferrioxamine	Butanediamide, N-[5-[4-[5-(acetylhydroxyamino)pentylamino]-1,4-dioxobutyl]hydroxyamino]pentyl]-N-(5-aminopentyl)-N-hydroxy- [CAS]	70-51-9		Antidote	Poisoning, metal
<b>Desflurane</b>		57041-67-5			
<b>Desipramine</b>		50-47-5			
<b>Deslanoside</b>		17598-65-1			
desloratadine	5H-Benzo(5,6)cyclohepta(1,2-b)pyridine, 8-chloro-6,11-dihydro-11-(4-piperidinylidene)- [CAS]	100643-71-8	US 5595997	Antiallergic, non-asthma	Rhinitis, allergic, perennial
deslorelin	Luteinizing hormone-releasing factor (pIg), 6-D-tryptophan-9-(N-ethyl-L-prolinamide)-10-deglycinamide- [CAS]	57773-65-6	US 4034082	Releasing hormones	Cancer, prostate
desmopressin	Vasopressin, 1-(3-mercaptopropanoic acid)-8-D-arginine- [CAS]	16679-58-6	DE 2948345	Hormone	Enuresis
<b>Desogestrel</b>		54024-22-5			
desogestrel + estradiol	Estra-1,3,5(10)-triene-3,17-diol (17 $\beta$ ), mixt. with (17 $\alpha$ )-13-ethyl-11-methylene-18,19-dinorpregn-4-en-20-yn-17-ol [CAS]	122364-17-4		Menopausal disorders	Hormone replacement therapy
desogestrel, Akzo Nobel	18,19-Dinorpregn-4-en-20-yn-17-ol, 13-ethyl-11-methylene-, (17 $\alpha$ )- [CAS]	54024-55-5		Formulation, oral, other	Contraceptive, female
desogestrel+ethinylestrad (1)	18,19-Dinorpregn-4-en-20-yn-17-ol, 13-ethyl-11-methylene-, (17 $\alpha$ )- [CAS]	54024-22-5			
<b>Desomorphine</b>		71138-35-7	US 3927046	Formulation, oral, other	Contraceptive, female
<b>Desonide</b>		427-00-9			
<b>Desoximetasone</b>		638-94-8			
<b>Detaxtran</b>		382-67-2			
Devacade		9015-73-0			
dexamethasone	Pregna-1,4-diene-3,20-dione,9-fluoro-11,17,21-trihydroxy-16-methyl-, (11 $\beta$ ,16 $\alpha$ )- [CAS]	50-02-2 2392-39-4 312-93-6	WO 9308176	Analgesic, other	Pain, general
dexanabinol	6H-Dibenzo[b,d]pyran-9-methanol, 3-(1,1-dimethylheptyl)-6a,7,10,10a-tetrahydro-1-hydroxy-6,6-dimethyl-, (6aS-trans)- [CAS]	112924-45-5	EP 427518	Formulation, other	Inflammation, ocular
				Neuroprotective	Head trauma



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dexecadotril	Glycine, N-[2-[(acetylthio)methyl]-1-oxo-3-phenylpropyl]-, phenylmethyl ester, (R)- [CAS]	112573-72-5	EP 318377	Alimentary/Metabolic, other	Unspecified
dexefaroxan	1H-Imidazole, 2-(2-ethyl-2,3-dihydro-2-benzofuranyl)-4,5-dihydro- [CAS]	89197-00-2 89197-32-0	EP 71368	Cognition enhancer	Alzheimer's disease
<b>Dexetimide</b>		21888-98-2			
dexibuprofen	Benzeneacetic acid, Alpha-methyl-4-(2-methylpropyl)-, (AlphaS)- [CAS]	51146-56-6		Analgesic, NSAID	Pain, general
dexketoprofen	Benzeneacetic acid, 3-benzoyl-Alpha-methyl-, (S)- [CAS]	22161-81-5		Anti-inflammatory	Inflammation, general
dexloxiglumide	Pentanoic acid, 4-[(3,4-dichlorobenzoyl)amino]-5-[(3-methoxypropyl)pentylamino]-5-oxo-, (R)- [CAS]	119817-90-2	EP 0344184	GI inflammatory/bowel disorders	Iritable bowel syndrome
dexmedetomidine	1H-Imidazole, 4-[1-(2,3-dimethylphenyl)ethyl]-, (R)- [CAS] 2-Piperidineacetic acid, Alpha-phenyl-, methyl ester, (AlphaR,2R)-	113775-47-6 86347-15-1	EP 187471	Hypnotic/Sedative	Anaesthesia
dexmethyphenidate		19262-68-1		Psychostimulant	Attention deficit disorder
<b>Dexpanthenol</b>		81-13-0			
dexrazoxane	2,6-Piperazinedione, 4,4'-(1-methyl-1,2-ethanediyl)bis-, (S)- [CAS]	24584-09-6	DE 1910283	Radio/chemoprotective	Chemotherapy-induced injury, general
Dextran-1	Dextran [CAS]	9004-54-0		Plasma substitute	
<b>Dextranomer</b>		56087-11-7			
<b>Dextroamphetamine</b>		51-64-9			
dextromethorphan	Morphinan, 3-methoxy-17-methyl-, (9Alpha,13Alpha,14Alpha)-	6700-34-1 125-71-3	US 4221788	Formulation, oral, other	Cough, Emotional lability
<b>Dextromoramide</b>		357-56-2			
dextropropoxyphene	Benzeneethanol, Alpha-[2-(dimethylamino)1-methylethyl]-Alpha-phenyl-, propanoate (ester), [S-(R*,S*)]- [CAS]	469-62-5		Formulation, modified-release, other	Pain, general
<b>Dezocine</b>		53648-55-8			
DF-1012	N-Tropyl 7-azaindol-3-ylcarboxamide	163220-65-3	WO 9504742	Respiratory	Respiratory disease, general
DFA-IV	di-D-fructofuranose 2,6':6,2' dianhydride		US 5700832	Antianaemic	Anaemia, aplastic

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
d-Fenchone		4695-62-9			
D-Glucuronolactone		32449-92-6			
Diab II	Diab II	309956-85-2	US 6153632	Antidiabetic	Diabetes, Type II
diacerein	2-Anthracenecarboxylic acid, 4,5-bis(acetyloxy)-9,10-dihydro-9,10-dioxo-[CAS]	13739-02-1	US 4244968	Antiarthritic, other	Arthritis, rheumatoid
Diampromide		552-25-0			
Diamthazole		136-96-9			
Diathymosulfone		5964-62-5			
Diatrizoate		737-31-5			
diazepam	2H-1,4-Benzodiazepin-2-one, 7-chloro-1,3-dihydro-1-methyl-5-phenyl- [CAS]	439-14-5		Formulation, transmucosal, systemic	Anxiety, epilepsy, general
Diaziquone		57998-68-2			
Diazoxide		364-98-7			
dibekacin	D-Streptamine, O-3-amino-3-deoxy-Alpha-D-glucopyranosyl-(1-6)-O-[2,6-diamino-2,3,4,6-tetra-deoxy-Alpha-D-erythro-hexopyranosyl-(1-4)]-2-deoxy-, sulfate (salt)[CAS]	34493-98-6 58580-55-5	GB 1349302	Aminoglycoside antibiotic	Infection, general
Dibenzepin		4498-32-2			
Dibromopropamidine		496-00-4			
Dibucaine		61-12-1			
Dichloralphenazone		480-30-8			
Dichloramine T		473-34-7			
Dichlorisone		7008-26-6			
Dichlorobenzyl Alcohol		1777-82-8			
Dichlorophen		97-23-4			
Dichlorophenarsine		536-29-8			
Dichlorophenamide		120-97-8			
diclofenac + HA	Hyaluronic acid + benzenecarboxylic acid, 2-[(2,6-dichlorophenyl)amino]- [CAS]			Formulation, transdermal, systemic	Keratosis
diclofenac	Benzenecarboxylic acid, 2-[(2,6-dichlorophenyl)amino]-, [CAS]	15307-79-6 15307-86-5 15307-81-0		Formulation, modified-release, <=24hr	Pain, general

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Dicloxacinil		3116-76-5			
Dicumarol		66-76-2			
Dicyclomine		77-19-0			
didanosine	Inosine, 2',3'-dideoxy- [CAS]	69655-05-6	US 4861759	Antiviral, anti-HIV	Infection, HIV/AIDS
Dideoxyadenosine		4097-22-7			
didox	Benzamide, N,3,4-trihydroxy- [CAS]	69839-83-4	US 4263322	Anticancer, antimetabolite	Cancer, general
Dienestrol		84-17-3			
dienogest	19-Norpregna-4,9-diene-21-nitrile, 17-hydroxy-3-oxo-, (17Alpha)- [CAS]	65928-58-7	GB 1524917	Menstruation disorders	Endometriosis
dienogest+estradiol	19-Norpregna-4,9-diene-21-nitrile, 17-hydroxy-3-oxo-, (17Alpha) + Estra-1,3,5(10)-triene-3,17-diol(17B)			Formulation, fixed-dose combinations	Contraceptive, female
Diethadione		702-54-5			
Diethazine		60-91-3			
Diethylbromoacetamide		511-70-6			
Diethylcarbamazine		90-89-1			
diethylpropion	1-Propanone, 2-(diethylamino)-1-phenyl- [CAS]	90-84-6		Formulation, modified-release, <=24hr	Obesity
Diethylstilbestrol		56-53-1			
Difemerine		80387-96-8			
Difenamizole		20170-20-1			
Difenoxin		28782-42-5			
Difenpiramide		51484-40-3			
diflomotecan	(5R)-5-Ethyl-9,10-difluoro-1,4,5,13-tetrahydro-5-hydroxy-3H,15H-oxepino[3',4':6,indolizino[1,2-b]quinoline-3,15-dione				
		220997-97-7		Anticancer, other	Cancer, general
diflorasone	Pregna-1,4-diene-3,20-dione, 17,21-bis(acetyloxy)-6,9-difluoro-11-hydroxy-16-methyl-, (6Alpha,11B,16B)- [CAS]	33564-31-7			
Difloxacin		2557-49-5	US 3980778	Antipsoriasis	
Diflucortolone		98106-17-3			
		2607-6-9			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
diflunisal	2,4'-difluoro-4-hydroxy[1,1'-biphenyl]-3-carboxylic acid	23674-86-4 22494-42-4	GB 1175212	Analgesic, NSAID	Pain, post-operative
Difluprednate		23674-86-4			
Digitalin		752-61-4			
Digitoxin		71-63-6			
digoxin	Card-20(22)-enolide, 3-[(O-2,6-dideoxy-β-D-ribo-hexopyranosyl-(1-4)-O-2,6-dideoxy-β-D-ribo-hexopyranosyl-(1-4)-2,6-dideoxy-β-D-ribo-hexopyranosyl)oxy]-12,14-dihydroxy-, (3β,5β,12β)- [CAS]	20830-75-5	US 4088750	Formulation, oral, enteric-coated	Heart failure
Dihexyverine		561-77-3			
Dihydralazine		484-23-1			
Dihydrocodeine		125-28-0			
Dihydrocodeinone Enol		466-90-0			
dihydroergocryptine	Ergocryptine, dihydro- [CAS]	25447-66-9		Formulation, other	Depression, general
dihydroergotamine	Ergotaman-3',6',18-trione, 9,10-dihydro-12'-hydroxy-2'-methyl-5'-(phenylmethyl)-, (5'Alpha,10Alpha)- [CAS]	511-12-6	6495535	Formulation, modified-release, other	Migraine
Dihydromorphine		509-60-4			
Dihydrostreptomycin		128-46-1			
Dihydrotachysterol		67-96-9			
Dihydroxyaluminum		13682-92-3			
		539-68-4			
		5966-41-6			
Diisopromine		3254-66-8			
Diisopropyl Paraoxon		660-27-5			
Dilsopropylamine					
dilazep	Benzoic acid, 3,4,5-trimethoxy-, (tetrahydro-1H-1,4-diazepine-1,4(5H)-diyl)di-3,1-propanediyl ester [CAS]	35898-87-4	JP 51095086	Vasodilator, coronary	
Dilevalol		75659-07-3			
diloxanide	2-Furancarboxylic acid, 4-[[[dichloroacetyl)methylamino]phenyl ester [CAS]	3736-81-0 579-38-4		Amoebicide	

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diltiazem	1,5-Benzothiazepin-4(5H)-one, 3-(acetyloxy)-5-[2-(dimethylamino)ethyl]-2,3-dihydro-2-(4-methoxyphenyl)-, (2S-cis)- [CAS]	33286-22-5 42399-41-7	US 4721619 US 5529791 EP 322277	Antianginal	Angina, hypertension, general
Dimecrotic Acid		7706-67-4			
Dimeflin		1165-48-6			
Dimemorfan		36309-01-0			
Dimenhydrinate		523-87-5			
Dimenoxadol		509-78-4			
Dimepheptanol		545-90-4			
Dimercaprol		59-52-9			
Dimetacrine		4757-55-5			
Dimethadione		695-53-4			
Dimethazan		519-30-2			
Dimethindene		5636-83-9			
Dimethisoquin		86-80-6			
Dimethisterone		79-64-1			
Dimethocaine		94-15-5			
Dimethoxanate		477-93-0			
Dimethyl Sulfoxide		67-68-5			
Dimethylthiambutene		524-84-5			
Dimetofrine		22950-29-4			
Dimorpholamine		119-48-2			
dinoprostone	Prosta-5,13-dien-1-oic acid, 11,15-dihydroxy-9-oxo-, (5Z,11Alpha,13E,15S)- [CAS]	363-24-6		Formulation, modified-release, <=24hr	Labour, induction
diosmectite	Smecta- [CAS]	110070-78-5	FR 2770778	Antidiarrhoeal	Diarrhoea, general
diosmin	4H-1-Benzopyran-4-one, 7-[[6-O-(6-deoxy-Alpha-L-mannopyranosyl)-beta.-D-glucopyranosyl]oxy]-5-hydroxy-2-(3-hydroxy-4-methoxyphenyl)- [CAS]	520-27-4	DE 2602314	Vasoprotective, systemic	
Dioxadrol		6495-46-1			
Dioxaphetyl		467-86-7			
Dioxethedrine		497-75-6			
Dioxybenzone		131-53-3			



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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Diphepanil		62-97-5			
Diphenadione		82-66-6			
Diphenacyprone		886-38-4			
Diphenhydramine		58-73-1			
Diphenidol		972-02-1			
Diphenoxylate		915-30-0			
Diphenylpyraline		147-20-6			
Diphetarosone		515-76-4			
Diphtheria & Tetanus Toxoids And Acellular Pertussis Vaccine Adsorbed					
Dipipanone		467-83-4			
dipivefrin	Propanoic acid, 2,2-dimethyl-, 4-[1-hydroxy-2-(methylamino)ethyl]-1,2-phenylene ester, (+/-)- [CAS]	52365-63-6	US 3809714	Antiglaucoma	Glaucoma
Dipyridamole		58-32-2			
Dipyrocetyl		486-79-3			
Dipyrone		5907-38-0			
diquafosol	Uridine 5'-(pentahydrogen tetraphosphate)-5'-ester with uridine, [CAS]	211427-08-6		Ophthalmological	Dry eye syndrome
dirithromycin	Erythromycin, 9-deoxo-11-deoxy-9,11-[imino[2-(2-methoxyethoxy)ethylidene]oxy]-, [9S(R)]- [CAS]	62013-04-1	DE 2515075	Macrolide antibiotic	Tonsillitis
disodium pamldronate	Phosphonic acid, (3-amino-1-hydroxypropylidene)bis-, disodium salt [CAS]	57248-88-1	EP 177443	Osteoporosis treatment	Hypercalcaemia of malignancy
Disofenin		65717-97-7			
disopyramide	2-Pyridineacetamide, Alpha-[2-bis(1-methylethyl)amino]ethyl]-Alpha-phenyl- [CAS]	3737-09-5		Formulation, modified-release, <=24hr	Arrhythmia, general
Distigmine		15876-67-2			
Disulfamide		671-88-5			



Table IV

API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Disulfiram		97-77-8			
Ditazol		18471-20-0			
Dithiazanine		514-73-8			
dithranol	9(10H)-Anthracenone, 1,8-dihydroxy- [CAS]	1143-38-0		Formulation, dermal, topical	Psoriasis
Ditiocarb		148-18-5			
Dixanthogen		502-55-6			
Dixyrazine		2470-73-7			
DJ-927			WO 01027115	Anticancer, other	Cancer, general
DK-507k	(-)-7-[(7S)-7-Amino-5-azaspiro[2,4]heptan-5-yl]-6-fluoro-1-[(1R,2S)-2-fluoro-1-cyclopropyl]-1,4-dihydro-8-methoxy-4-oxo-3-quinolinecarboxylic acid hydrochloride monohydrate			Quinolone antibacterial	Infection, general
D,L-Lactic Acid		598-82-3			
DMDC	Cytidine, 2'-deoxy-2'-methylene-, monohydrochloride [CAS]	113648-25-2	WO 8807049	Anticancer, antimetabolite	Cancer, general
DMXAA	5,6-dimethylxanthenone-4-acetic acid			Anticancer, other	Cancer, lung, general
DNA Stealth Nucleosides			US 6132776	Antiviral, anti-HIV	Infection, HIV/AIDS
Dobesilate		20123-80-2			
dobutamine	1,2-Benzenediol, 4-[2-{[3-(4-hydroxyphenyl)-1-methylpropyl]amino}ethyl]-, (+/-)- [CAS]	34368-04-2 49745-95-1	US 3987200	Cardio stimulant	
Docarpamine		74639-40-0			
docetaxel	(2R,3S)-N-Carboxy-3-phenylisoserine, N-tert-butyl ester, 13-ester with 5β,20-epoxy-1,2Alpha,4,7β,10β,13Alpha-hexahydroxytax-11-en-9-one 4-acetate 2-benzoate- [CAS]	114977-28-5 148408-66-6	EP 253738 EP 707487	Anticancer, other Hypolipaeamic/Antiatherosclerosis	Cancer, breast Hyperlipidaemia, general
docosahexaenoic acid					
docosanol	1-Docosanol [CAS]	661-19-8	EP 469064	Antiviral, other	Infection, herpes simplex virus
docusate		128-49-4 577-11-7	US 4752617	Formulation, dermal, topical	Infection, herpes simplex virus prophylaxis

Table IV

API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
dofetilide	Methanesulfonamide, N-[4-[2-[methyl[2-[4-[(methylsulfonyl)amino]phenoxy]ethyl]aminomethyl]phenyl]- [CAS]	115256-11-6	EP 245997	Antiarrhythmic	Fibrillation, atrial
dolasetron mesilate	1H-Indole-3-carboxylic acid, octahydro-3-oxo-2,6-methano-2H-quinolizin-8-yl ester, (2Alpha,6Alpha,8Alpha,9Alpha)-, monomethanesulfonate- [CAS]	115956-13-3 115956-12-2	EP 266730	Antiemetic	Chemotherapy-induced nausea and vomiting
<b>Domiodol</b>		61869-07-6			
<b>Domiphen</b>		538-71-6			
<b>Domitroban</b>		112966-96-8			
domperidone	2H-Benzimidazol-2-one, 5-chloro-1-[1-[3-(2,3-dihydro-2-oxo-1H-benzimidazol-1-yl)propyl]-4-piperidinyl]-1,3-dihydro- [CAS]	57808-66-9	US 4066772	Antiemetic	
donepezil	1H-Inden-1-one, 2,3-dihydro-5,6-dimethoxy-2-((1-(phenylmethyl)-4-piperidinyl)methyl)-, [CAS]	120011-70-3 120014-06-4	EP 296560	Cognition enhancer	Alzheimer's disease
donitriptan	Piperazine, 1-(((3-(2-aminoethyl)-1H-indol-5-yl)oxy)acetyl)-4-(4-cyanophenyl)- [CAS]	170912-52-4		Antimigraine	Migraine
<b>Dopamine</b>		51-61-6			
<b>Dopexamine</b>		86197-47-9			
doramapimod	urea, N-[3-(1,1-dimethylethyl)-1-(4-methylphenyl)-1H-pyrazol-5-yl]-N'-[4-[2-(4-morpholinyl)ethoxy]-1-naphthalenyl]-	285983-48-4		Antiarthritic, immunological	Arthritis, rheumatoid
doranidazole	(±)-1,2,4-Butanetriol, 3-((2-nitro-1H-imidazol-1-yl)methoxy)- [CAS]	137339-64-1	WO 9414778	Radio/chemosensitizer	Surgery adjunct
doripenem	(1R,5S,6S)-2-[(3S,5S)-5-(sulfamoylaminoethyl)pyrrolidin-3-yl]thio-6-[(1R)-1-hydroxyethyl]-1-methylcarbapen-2-em-3-carboxylic acid	148016-81-3	EP 528678	Beta-lactam antibiotic	Infection, urinary tract
dorzolamide	4H-Thieno(2,3-b)thiopyran-2-sulfonamide, 4-(ethylamino)-5,6-dihydro-6-methyl-, 7,7-dioxide (4S-trans)- [CAS]	120279-96-1	EP 296879	Antiglaucoma	Glaucoma

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dorzolamide + timolol	4H-Thieno(2,3-b)thiopyran-2-sulfonamide, 4-(ethylamino)-5,6-dihydro-6-methyl-7,7-dioxide (4S-trans) + ethyl 2-propanol, 1-[(1,1-dimethyl)amino]-3-[[4-(4-morpholinyl)-1,2,5-thiadiazol-3-yl]oxy]-, (S), (Z)-2-butenedioate (1:1) (salt) [CAS]	120279-96-1 26839-75-8 26921-17-5		Formulation, fixed-dose combinations	Glaucoma
	Aluminium, (μ7-(7-((6-O-(6-deoxy-2,3,4-tri-O-sulfo-Alpha-L-mannosylpyranosyl)-2,3,4-tri-O-sulfo-β-D-glucopyranosyl)oxy)-5-hydroxy-2-(4-methoxy-3-(sulfooxy)phenyl)-4H-1-benzopyran-4-onato(7-)))tetradeca-μ-hydroxy)heneicosahydroxytetradeca- [CAS]	122312-55-4		Antitumor	Ulcer, gastric
	1-Propanamine, 3-dibenzo[b,e]thiepin-11(6H)-ylidene-N,N-dimethyl- [CAS]	113-53-1		Antidepressant	
dosulepine		84625-59-2			
Dotarizine		113-53-1			
Dothiepin		106819-53-8			
Doxacurium		309-29-5			
Doxapram	Piperazine, 1-(4-amino-6,7-dimethoxy-2-quinazolinyl)-4-[(2,3-dihydro-1,4-benzodioxin-2-yl)carbonyl]- [CAS]	74191-85-8	GB 2007656	Antihypertensive, adrenergic	Hypertension, general
doxazosin		40762-15-0			
Doxefazepam		3254-93-1			
Doxenitoin	1-Propanamine, 3-dibenzo[b,e]oxepin-11(6H)-ylidene-N,N-dimethyl-	1668-19-5		Formulation, dermal, topical	Pruritus
doxepin					
doxercalciferol	9,10-secoergosta-5,7,10(19),22-tetraene-1,3-diol (1Alpha, 3β, 5Z, 7E, 22E) [CAS]	54573-75-0	US 5104854	Hormone	Hyperparathyroidism
doxifluridine	Uridine, 5'-deoxy-5-fluoro- [CAS]	3094-09-5	US 4071680	Anticancer, antimetabolite	Cancer, colorectal
doxofylline	1H-Purine-2,6-dione, 7-(1,3-dioxolan-2-ylmethyl)-3,7-dihydro-1,3-dimethyl-[CAS]	69975-86-6	US 4187308	Antiasthma	Asthma

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doxorubicin	5,12-Naphthacenedione, 10-[(3-amino-2,3,6-trideoxy-Alpha-L-lyxohexopyranosyl)oxy]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-8-(hydroxyacetyl)-1-methoxy-, (8S-cis)- [CAS]	23214-92-8	EP 191824	Formulation, optimized, liposomes	Cancer, general
	2-Naphthacenecarboxamine, 4-(dimethylamino)-1,4,4a,5,5a,6,11,12a-octahydro-3,5,10,12,12a-pentahydroxy-6-methyl-1,11-dioxo-[4S-(4Alpha,4aAlpha,5Alpha,5aAlpha,6Alpha,12aAlpha)]- [CAS]	564-25-0 17086-28-1		Formulation, modified-release, Immediate	Periodontitis
doxycycline	N,N-Dimethyl-2-[1-phenyl-1-(2-pyridinyl)ethoxy]ethanamine	469-21-6		Formulation, transmucosal, systemic	Rhinitis, allergic, general
doxylamine	β-D-2',3'-dideoxy-2',3'-dideoxy-5-fluorocytidine			Antiviral, anti-HIV	Infection, HIV/AIDS
DPC-817			US 5681830	Analgesic, other	Pain, general
DPI-3290					
DQ-113	15-Amino-7-[(3S,4R)-(1-aminocyclopropyl)-3-fluoropyrrolidin-1-yl]-1-[(1R,2S)-2-fluoro-1-cyclopropyl]-1,4-dihydro-8-methyl-4-oxo-3-quinolinecarboxylic acid			Quinolone antibacterial	Infection, general
		1679-76-1			
		82413-20-5			
		2440-22-4			
Drometrizole		58-19-5			
Dromostanolone					
dronabinol	6H-Dibenzo[b,d]pyran-1-ol, 6a,7,8,10a-tetrahydro-6,6,9-trimethyl-3-pentyl-, (6aR-trans)- [CAS]	1972-08-3		Antiemetic	Chemotherapy-induced nausea and vomiting
	2-n-Butyl 3-[4-(3-di-n-butylamino-propoxy)benzoyl]5-methylsulfonamidobenzofuran			Antiarrhythmic	Arrhythmia, general
dronedarone					
Dropridol		548-73-2			
Droprenilamine		57653-27-7			

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Dropipizine		17692-31-8			
Drospirenone		67392-87-4			
Drotaverine		14009-24-6			
Drotebanol		03/02/3176			
droxicam	2H,5H-1,3-Oxazino[5,6-c][1,2]benzothiazine-2,4(3H)-dione, 5-methyl-3-(2-pyridinyl)-, 6,6-dioxide [CAS]	90101-16-9	EP 99770	Anti-inflammatory	Inflammation, general
droxidopa	L-Tyrosine, $\beta$ ,3-dihydroxy-, threo- [CAS]	23651-95-8	EP 128684	Antiparkinsonian	Parkinson's disease
<b>Droxidopa</b>		23651-95-8			
DU-125530	1,2-Benzisothiazol-3(2H)-one, 2-[4-(7-chloro-2,3-dihydro-1,4-benzodioxin-5-yl)-1-piperazinyl]butyl-, 1,1-dioxide [CAS]	161611-99-0	EP 633260	Anxiolytic	Anxiety, general
duloxetine	2-Thiophenepropanamine, N-methyl-Gamma-(1-naphthalenyloxy)-, hydrochloride, (S)- [CAS]	136434-34-9 116539-59-4	US 5362886	Antidepressant	Depression, general
duramycin			WO 9428726	Formulation, inhalable, solution	Cystic fibrosis
<b>Durapatite</b>		1306-06-5			
dutasteride	4-Azaandrost-1-ene-17-carboxamide, N-(2,5-bis(trifluoromethyl)phenyl)-3-oxo-, (5 $\alpha$ ), 17 $\beta$ )- [CAS]	164656-23-9	US 5565467	Prostate disorders	Benign prostatic hyperplasia
DW-1141	N,N-diisopropyl-4-[4-(3-aminobenzo[d]isoxazol-6-yloxy)butoxy]-3-methoxybenzamide			Osteoporosis treatment	Osteoporosis
	(R)-(-)-7-((4-aminomethyl-4-methyl-3-(Z)-methyloxyimino)pyrrolidin-1-yl)-1-cyclopropyl-6-fluoro-4-oxo-1,4-dihydro[1,8]naphthyridine-3-carboxylic acid			Quinolone antibacterial	Infection, general
DW-286a			US 5922871	Antiviral, other	Infection, hepatitis-B virus
DW-471					

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DX-9065a	2-Naphthalenepropanoic acid, 7-(aminolinomethyl)-Alpha-[4-[[1-(1-iminoethyl)-3-pyrrolidinyl]oxy]phenyl]-, monohydrochloride, pentahydrate, [S-(R*,R*)]- [CAS]	155204-81-2		Antithrombotic	Thrombosis, general
DY-9760e	1H-Indazole, 3-[2-[4-(3-chloro-2-methylphenyl)-1-piperazinyl]ethyl]-1-(1H-imidazol-4-ylmethyl)-5,6-dimethoxy- [CAS]	160522-00-9	US 5681954	Neuroprotective	Ischaemia, cerebral
Dyclonine		586-60-7			
Dydrogesterone		152-62-5			
Dymanthine		124-28-7			
Dyphylline		479-18-5			
E-1010	1-Azabicyclo[3.2.0]hept-2-ene-2-carboxylic acid, 6-[[1(R)-1-hydroxyethyl]-3-[[[(3S,5S)-5-[(R)-hydroxy(3R)-3-pyrrolidinylmethyl]-3-pyrrolidinyl]thio]-4-methyl-7-oxo-, monohydrochloride, (4R,5S,6S)- [CAS]	186319-97-1		Beta-lactam antibiotic	Infection, general
E-2101	N-Ethyl-(1-[1-(2-fluorophenethyl)piperidin-4-yl]-1H-indol-6-yl)acetamide			Muscle relaxant	Muscle spasm, general
E2F antagonists			WO 9606943	Anticancer, other	Cancer, general
E-3620	Benzamide, 4-amino-5-chloro-N-(8-methyl-8-azabicyclo[3.2.1]oct-3-yl)-2-[[1-methyl-2-butynyl]oxy]-, monohydrochloride, [3(S)-endo]- [CAS]	151213-86-4	EP 554794	Antacid/Antiflatulent	Dyspepsia
E-5564	Alpha-D-Glucopyranose, 3-O-decyl-2-deoxy-6-O-(2-deoxy-3-O-((3R)-3-methoxydecyl)-6-O-methyl-2-(((11Z)-1-oxo-11-octadecenyl)amino)-4-O-phosphono-beta-D-glucopyranosyl)-2-((1,3-dioxotetradecyl)amino)- 1-(dihydrogen phosphate), tetrasodium salt [CAS]	185954-98-7	EP 536969	Septic shock treatment	Sepsis



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E-5842	Pyridine, 4-(4-fluorophenyl)-1,2,3,6-tetrahydro-1-[4-(1H-1,2,4-triazol-1-yl)butyl]-2-hydroxy-1,2,3-propanetricarboxylate (1:1) [CAS]	220120-14-9		Neuroleptic	Schizophrenia
E-6259	1-(4-Aminosulfonylphenyl)-5-(2,4-difluorophenyl)-4,5-dihydro-3-trifluoromethyl-1H-pyrazole			Antiarthritic, other	Unspecified
EAA-90	[2-(8,9-Dioxo-2,6-diazabicyclo[5.2.0]non-1(7)-en-2-yl)-ethyl]phosphonic acid			Analgesic, other	Pain, neuropathic
<b><u><math>\epsilon</math>-Acetamidocaproic Acid</u></b>		57-08-9			
<b><u><math>\epsilon</math>-Aminocaproic Acid</u></b>		60-32-2			
ebastine	1-Butanone, 1-[4-(1,1-dimethylethyl)phenyl]-4-[4-(diphenylmethoxy)-1-piperidinyl]- [CAS]	90729-43-4	EP 134124	Antiallergic, non-asthma	Rhinitis, allergic, seasonal
eberconazole	1H-Imidazole, 1-(2,4-dichloro-10,11-dihydro-5H-dibenzof[a,d]cyclohepten-5-yl)- [CAS]	128326-82-9 130104-32-4	ES 2012297	Antifungal	Infection, dermatological
ebrotidine	Benzenesulfonamide, N-[[[2-[(aminoininomethyl)amino]-4-thiazolyl]methyl]thio]ethyl]amino]methylene]-4-bromo- [CAS]	100981-43-9	EP 159012	Antiulcer	Ulcer, duodenal
ebselel	1,2-Benzisoxaselenazol-3(2H)-one, 2-phenyl- [CAS]	60940-34-3	EP 44971	Neuroprotective	Haemorrhage, subarachnoid
<b><u>Eburnamone</u></b>		474-00-0			
<b><u>Ecabapide</u></b>		104775-36-2			
ecabet	1-Phenanthrenecarboxylic acid, 1,2,3,4,4a,9,10,10a-octahydro-1,4a-dimethyl-7-(1-methylethyl)-6-sulfo-, [1R-(1 $\alpha$ Pha,4 $\alpha$ S,10 $\alpha$ Apha)]- [CAS]	33159-27-2 86408-72-2	DE 3239172	Antiulcer	Ulcer, gastric
ecadotril	Glycine, N-[2-[(acetylthio)methyl]-1-oxo-3-phenylpropyl]-,phenylmethyl ester, (S)- [CAS]	112573-73-6	EP 318377	Antihypertensive, other	Hypertension, general
<b><u>Ecgonidine</u></b>		484-93-5			
<b><u>Ecgonine</u></b>		481-37-8			
<b><u>Echothiophate</u></b>		513-10-0			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
<b>Econazole</b>		27220-47-9			
ecopipam	5H-Benzo[d]naphth[2,1-b]azepin-12-ol, 11-chloro-6,6a,7,8,9,13b-hexahydro-7-methyl-, (6aS-trans)- [CAS]	112108-01-7	EP 230270	Anorectic/Antiobesity	Obesity
ecraprost	Prosta-8,13-dien-1-oic acid, 11,15-dihydroxy-9-(1-oxobutoxy)-, butyl ester, (11Alpha,13E,15S)- [CAS]	136892-64-3	EP 423697	Vasodilator, peripheral	Peripheral vascular disease
<b>Ectylurea</b>		95-04-5			
ED-71	9,10-Secocholesta-5,7,10(19)-triene-1,3,25-triol, 2-(3-hydroxypropoxy)-, (1Alpha,2B,3B,5Z,7E)- [CAS]	104121-92-8	EP 184206	Osteoporosis treatment	Osteoporosis
edaravone	3H-Pyrazol-3-one, 2,4-dihydro-5-methyl-2-phenyl- [CAS]	89-25-8	JP 62108814	Neuroprotective	Infarction, cerebral
<b>Edatrexate</b>		80576-83-6			
<b>Edetate Calcium</b>		62-33-9			
<b>Disodium</b>		139-33-3			
<b>Edetate Disodium</b>		64-02-8			
<b>Edetate Sodium</b>		150-38-9			
<b>Edetate Trisodium</b>					
edonentan	Butanamide,N-[[2'-[[4,5-dimethyl-3-(isoxazolyl)amino]sulfonyl]-4-(2-oxazolyl)][1,1'-biphenyl]-2-yl]methyl]-N,3,3-trimethyl-, monohydrate	210891-04-6		Cardio stimulant	Heart failure
edotretolide	[N-{2-[4,7-Bis[(carboxy-kappaO)methyl]-10-(carboxymethyl)-1,4,7,10-tetraazacyclododec-1-yl-kappaN1,kappaN4,kappaN10]acetyl]-D-phenylalanyl-L-cysteiny]-L-tyrosyl-D-tryptophyl-L-lysyl-L-threonyl-L-cysteiny]-L-threoninol cyclic (2-7)-disulfidato(3-)))]trium	204318-14-9	US 6183721	Anticancer, hormonal	Cancer, lung, small cell
edoxudine	Uridine, 2'-deoxy-5-ethyl- [CAS]	15176-29-1	GB 1170565	Antiviral, other	Infection, herpes virus, general
<b>Edrecolomab</b>		156586-89-9			
<b>Edrophonium</b>		116-38-1			
Efalith	Butanedioic acid, lithium salt [CAS]	16090-09-8		Antipruritic/inflamm, allergic	Eczema, seborrhoeic

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efaproxiral	Propanoic acid, 2-[4-[2-[(3,5-dimethylphenyl)amino]-2-oxoethyl]phenoxy]-2-methyl- [CAS]	131179-95-8	US 5705521	Radio/chemosensitizer	Cancer, brain
efavirenz	2H-3,1-Benzoxazin-2-one, 6-chloro-4-(cyclopropylethynyl)-1,4-dihydro-4-(trifluoromethyl)-, (S)- [CAS]	154598-52-4	WO 9403440	Antiviral, anti-HIV	Infection, HIV/AIDS
efletirizine	[2-[4-[Bis(p-fluorophenyl)methyl]-1-piperazinyl]ethoxy]acetic acid	150756-35-7	GB 2311940	Antiallergic, non-asthma	Allergy, general
eflornithine	DL-Ornithine, 2-(difluoromethyl)- [CAS]	70052-12-9	US 4413141	Protozoacide, dermal, topical	Infection, trypanosomiasis, African, Hirsutism
<b>Efloxetine</b>		67037-37-0			
	Benzenecetamide, Alpha-(dodecylthio)-N-(4-hydroxy-2,3,5-trimethylphenyl)- (S)- [CAS]	119-41-5			
eflucimibe		202340-45-2		Hypolipaeic/Antiatherosclerosis	Hyperlipidaemia, general
efonidipine	3-pyridinecarboxylic acid, 5-(5,5-dimethyl-1,3,2-dioxaphosphorinan-2-yl)-1,4-dihydro-2,6-dimethyl-4-(3-nitrophenyl)-, 2-(phenyl(phenylmethyl)amino)ethyl ester, P-oxide [CAS]	111011-53-1 111011-63-3 111011-76-8	EP 230944	Antihypertensive, other	Hypertension, general
EGIS-7229	5-Chloro-4-[3-N-[2-(3,4-dimethoxyphenyl)ethyl]-N-methylamino]propylamino]-3(2H)-pyridazinone fumarate [CAS]	150800-12-7 190333-92-7	DE 4243381	Antiarrhythmic	Arrhythmia, general
eglumegad	Bicyclo[3.1.0]hexane-2,6-dicarboxylic acid, 2-amino-, (1S,2S,5R,6S)- [CAS]	176199-48-7 209216-09-1		Anxiolytic	Anxiety, general
egualen	1-Azulenenesulfonic acid, 3-ethyl-7-(1-methylethyl)-	97683-31-3 99287-30-6	EP 147915	Antilucer	Ulcer, gastric
<b>Eicosapentaenoic Acid</b>		10417-94-4			
elarofiban	3-Pyridinepropanoic acid, $\beta$ -[[(3R)-1-[1-oxo-3-(4-piperidinyl)propyl]-3-piperidinyl]carbonyl]amino]-, (3S)- [CAS]	198958-88-2	WO 9741102	Antithrombotic	Thrombosis, general
<b>Elcatonin</b>		60731-46-6			
<b>ElEDOisin</b>		69-25-0			
eletriptan	1H-Indole, 3-((1-methyl-2-pyrrolidinyl)methyl)-5-(2-(phenylsulfonyl)ethyl)- (R)- [CAS]	143322-58-1	US 5607951	Antimigraine	Migraine

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Elgodipine		119413-55-7			
Ellagic Acid		476-66-4			
Elliptinium		58337-35-2			
Eltoprazine		98224-03-4			
elvucitabine	$\beta$ -L-2',3'-Dideoxy-2',3'-dideoxy-5-fluorocytidine	181785-84-2		Antiviral, other	Infection, hepatitis-B virus
elzasonan	(2Z)-4-(3,4-dichlorophenyl)-2-[2-(4-methylpiperazin-1-yl)benzylidene]thiomorpholin-3-one monohydrochloride- [CAS]	220322-05-4 361343-20-6		Antidepressant	Depression, general
Embelin		550-24-3			
Embramine		3565-72-8			
emedastine	1H-Benzimidazole, 1-(2-ethoxyethyl)-2-(hexahydro-4-methyl-1H-1,4-diazepin-1-yl)-, (E)-2-butenedioate (1:2) [CAS]	87233-61-2 87233-62-3	EP 79545	Antiallergic, non-asthma	Rhinitis, allergic, general
Enepronium		3614-30-0			
Emetine		483-18-1			
Emitetur		110690-43-2			
EMM-210525	17Alpha-Acetoxy-6Alpha-methyl-19-nor-1 $\beta$ ,2 $\beta$ -dihydrocyclopropa[1,2]pregn-4-ene-3,20-dione+Estra-1,3,5(10)-triene-3,17-diol(17 $\beta$ )			Formulation, fixed-dose combinations	Hormone replacement therapy
Emodin		518-82-1			
emorfazone	3(2H)-Pyridazinone, 4-ethoxy-2-methyl-5-(4-morpholinyl)- [CAS]	38957-41-4	JP 7224030	Anti-inflammatory	
EMR-62203			WO 9806722	Male sexual dysfunction	Impotence
emtricitabine	2(1H)-Pyrimidinone, 4-amino-5-fluoro-1-(2-(hydroxymethyl)-1,3-oxathiolan-5-yl)-, (2R-cis)- [CAS]	143491-57-0	WO 9214743	Antiviral, anti-HIV	Infection, HIV/AIDS
Emylcamate		78-28-4			
enalapril	L-Proline, 1-[N-[1-(ethoxycarbonyl)-3-phenylpropyl]-L-alanyl]-, (S)-, (Z)-2-butenedioate [CAS]	76095-16-4	US 4374829	Antihypertensive, renin system	
Enalaprilat		76420-72-9			
Enallylpropymal		1861-21-8			

Table IV

API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Encainide		66778-36-7			
Enciprazine		68576-86-3			
Endralazine		39715-02-1			
enfenamic acid	Benzoic acid, 2-[(2-phenylethyl)amino]- [CAS]	23049-93-6	IN 103066	Anti-inflammatory	
enflurane	Ethane, 2-chloro-1-(difluoromethoxy)-1,1,2,2-trifluoro- [CAS]	13838-16-9	US 3469011	Anaesthetic, inhalation	Anaesthesia
Enilconazole		35554-44-0			
Eniluracil		59989-18-3			
ENMD-0995	S-3-amino-phthalidoglutarimide		US 5712291	Anticancer, other	Cancer, myeloma
Enocitabine		55726-47-1			
Enol-3-IPA	1H-Indole-3-propanoic acid, Alpha-oxo- [CAS]	392-12-1	EP 106813	Hypnotic/Sedative	Insomnia
enoxacin	1,8-Naphthyridine-3-carboxylic acid, 1-ethyl-6-fluoro-1,4-dihydro-4-oxo-7-(1-piperazinyl)- [CAS]	74011-58-8	US 4359578	Quinolone antibacterial	Infection, general
enoxaparin	Heparin, [CAS]	9005-49-6 9041-08-1	EP 40144	Antithrombotic	Thrombosis, venous
enoximone	2H-Imidazol-2-one, 1,3-dihydro-4-methyl-5-[4-(methylthio)benzoyl]- [CAS]	77671-31-9	EP 59948	Cardio stimulant	Heart failure
Enoxolone		471-53-4			
enprostil	4,5-Heptadienoic acid, 7-[3-hydroxy-2-(3-hydroxy-4-phenoxy-1-butenyl)-5-oxocyclopentyl]-, methyl ester, [1Alpha,2B(1E,3R*),3Alpha]- [CAS]	73121-56-9	GB 2025431	Prostaglandin	Ulcer, duodenal
enrasentan	1H-Indene-2-carboxylic acid, 1-(1,3-benzodioxol-5-yl)-2,3-dihydro-3-(2-(2-hydroxyethoxy)-4-methoxyphenyl)-5-propoxy-, (1S-(1Alpha,2B,3Alpha))- [CAS]	167256-08-8	US 5817693	Antihypertensive, other	Hypertension, pulmonary
entacapone	2-Propenamide, 2-cyano-3-(4,5-dihydroxy-3-nitrophenyl)-N,N-diethyl- [CAS]	130929-57-6	EP 426468	Antiparkinsonian	Parkinson's disease
entecavir	6H-Purin-6-one, 2-amino-1,9-dihydro-9-((1S,3R,4S)-4-hydroxy-3-(hydroxymethyl)-2-methylenecyclopentyl)- [CAS]	142217-69-4	EP 481754	Antiviral, other	Infection, hepatitis-B virus



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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Enviomycin	3-Thiazolidineacetic acid, 5-(2-methyl-3-phenyl-2-propenylidene)-4-oxo-2-thioxo-, (E,E)- [CAS]	33103-22-9			
epalrestat	L-lysine-cis-5,8,11,14,17-eicosapentanoate with L-lysine-cis-4,7,10,13,16,19-doahexanoate	82159-09-9	EP 47109	Symptomatic antidiabetic	Neuropathy, diabetic
Epavir	L-ascorbic acid 2-[3,4-dihydro-2,5,7,8-tetramethyl-2-(4,8,12-trimethyltridecyl)-2H-1-benzopyran-6-yl]-hydrogen phosphate/potassium- [CAS]			Antiviral, other	Infection, herpes simplex virus
EPC-K1	1-Propanone, 1-(4-ethylphenyl)-2-methyl-3-(1-piperidinyl)- [CAS]	127061-56-7	EP 127471	Neuroprotective	Infarction, cerebral
eperisone	Uridine, 2'-deoxy-5-(1-methylethyl)- [CAS]	64840-90-0	US 3995047	Muscle relaxant	Spastic paralysis
epervudine		60136-25-6	DE 2918260	Antiviral, other	Infection, herpes simplex virus
Ephedrine		299-42-3			
Epicillin		26774-90-3			
Epimestrol		7004-98-0			
epinastine	1H-Dibenz[c,f]imidazo[1,5-a]zepin-3-amine, 9,13b-dihydro- [CAS]	80012-43-7	DE 3008944	Antiasthma	Asthma
epinephrine	(R)-4-[1-hydroxy-2-(methylamino)-ethyl]-1,2-benzenediol	51-43-4		Formulation, inhalable, dry powder	Anaphylaxis
Epirizole		18694-40-1			
epirubicin	5,12-Naphthacenedione, 10-[(3-amino-2,3,6-trideoxy-Alpha-L-arabino-hexopyranosyl)oxy]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-8-(hydroxyacetyl)-1-methoxy-, (8S-cis)- [CAS]	56390-09-1 56420-45-2	GB 1457632	Anticancer, antibiotic	
Epitiostanol		2363-58-8			
epiprenone	Pregn-4-ene-7,21-dicarboxylic acid, 9,11-epoxy-17-hydroxy-3-oxo-, Gamma-lactone, methyl ester (7Alpha,11Alpha,17Alpha)- [CAS]				
		107724-20-9	EP 122232	Antihypertensive, diuretic	Hypertension, general



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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
eplivanserlin	1-Propanone, 1-(2-fluorophenyl)-3-(4-hydroxyphenyl)-, O-(2-(dimethylamino)ethyl)oxime, (Z)-, (E)-2-butenedioate (2:1) (salt) [CAS]	130580-02-8	EP 373998	Anxiolytic	Schizophrenia
epoprostenol	Prosta-5,13-dien-1-olic acid, 6,9-epoxy-11,15-dihydroxy-, (5Z,9Alpha,11Alpha,13E,15S)-[CAS]	35121-78-9 61849-14-7	DE 2720999	Prostaglandin	Hypertension, pulmonary
<b>Epostane</b>		80471-63-2			
<b>Eprazinone</b>		10402-90-1			
<b>Epristeride</b>		119169-78-7			
eprosartan	3-[2-Butyl-1-(4-carboxybenzyl)-1H-imidazol-5-yl]-2-(2-thienylmethyl)-2-(E)-propenoic acid	133040-01-4 32665-36-4	EP 403159	Antihypertensive, renin system	Hypertension, general
eptapirone	4-methyl-2-[4-(4-(pyrimidin-2-yl)-piperazino)-butyl]-2H,4H-1,2,4-triazin-3,5-dione	179756-85-5		Antidepressant	Depression, general
eptaplatin	Platinum, [(4R,5R)-2-(1-methylethyl)-1,3-dioxolane-4,5-dimethanamine-kappaN4,kappaN5][propanedioato(2-)-kappaO1,kappaO3]-, (SP-4-2)- [CAS]	146665-77-2 101246-68-8	WO 9216539	Anticancer, alkylating	Cancer, lung, small cell
<b>Eptastigmine</b>					
eptazocine	1,6-Methano-1H-4-benzazonin-10-ol, 2,3,4,5,6,7-hexahydro-1,4-dimethyl-, (1S)-[CAS]	72522-13-5	US 4082744	Analgesic, other	
<b>Eptifibatide</b>		188627-80-7			
<b>Equilenin</b>		517-09-9			
<b>Equilin</b>		474-86-2			
ERA-923	ERA 923 [CAS]	352233-89-7	EP 802183	Female contraceptive	Contraceptive, female
erdosteine	Acetic acid, [[2-oxo-2-[(tetrahydro-2-oxo-3-thienyl)amino]ethyl]thio]- [CAS]	84611-23-4	EP 61386	Respiratory	Respiratory disease, general
<b>Ergocornine</b>		564-36-3			
<b>Ergocorninine</b>		564-37-4			
<b>Ergoloid Mesylates</b>		8067-24-1			
<b>Ergonovine</b>		60-79-7			
<b>Ergosterol</b>		57-87-4			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
ergotamine	(5 $\alpha$ )-12'-Hydroxy-2'-methyl-(phenylmethyl)ergotaman-3',6',18-trione	113-15-5		Formulation, inhalable, systemic	Migraine
Eritadenine		23918-98-1			
erlotinib	4-Quinazolinamine, N-(3-ethynylphenyl)-6,7-bis(2-methoxyethoxy)-, monohydrochloride [CAS]	183319-69-9	WO 9630347	Anticancer, other	Cancer, lung, non-small cell
ertapenem	1-Azabicyclo[3.2.0]hept-2-ene-2-carboxylic acid, 3-[[[(3S,5S)-5-[[[(3-carboxyphenyl)amino]carbonyl]-3-pyrrolidinyl]thio]-6-[(1R)-1-hydroxyethyl]-4-methyl-7-oxo-, [CAS]	153773-82-1 153832-46-3	WO 9315078	Beta-lactam antibiotic	Infection, GI tract
Erythrityl Tetranitrate		7297-25-8			
Erythrocentaurin		50276-98-7			
erythromycin acistrate	Erythromycin, 2'-acetate, octadecanoate (salt) [CAS]	96128-89-1	US 4599326	Macrolide antibiotic	Infection, general
Erythromycin Estolate		3521-62-8			
Erythromycin		23067-13-2			
Glucoseptonate		3847-29-8			
Erythromycin		134-36-1			
Lactobionate					
Erythromycin Propionate		643-22-1			
Erythromycin Stearate	Erythromycin, 2'-propanoate, compd. with N-acetyl-L-cysteine (1:1) [CAS]	84252-03-9	EP 57489	Macrolide antibiotic	Infection, respiratory tract, lower
erythromycin stinoprate	Erythromycin [CAS]	114-07-8		Formulation, dermal, topical	Acne
erythromycin		36150-73-9			
Erythrophleine		64204-55-3			
Esaprazole	5-Isobenzofurancarboxitrile, 1-[3-(dimethylamino)propyl]-1-(4-fluorophenyl)-1,3-dihydro-, (S)- [CAS]	128196-01-0	EP 347066	Antidepressant	Depression, general
escitalopram		531-75-9			
Esculin		25573-43-7			
Eseridine					

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
esmolol	Benzenepropanoic acid, 4-[2-hydroxy-3-[(1-methylethyl)amino]propoxy]-, methyl ester, (+/-)- [CAS]	81147-92-4	US 4387103	Antihypertensive, adrenergic	Tachycardia, supraventricular
esomeprazole	bis (5-methoxy-2-[(4-methoxy-3,5-dimethyl-2-pyridinyl)methyl]sulfinyl)-1H-benzimidazolato	161973-10-0	US 5877192	Antispasmodic	Gastro-oesophageal reflux
estazolam	4H-[1,2,4]Triazolo[4,3-a][1,4]benzodiazepine, 8-chloro-6-phenyl- [CAS]	29975-16-4	US 3987052	Hypnotic/Sedative	
estradiol	Androst-4-en-3-one, 17-hydroxy-, (17 $\beta$ )- [CAS]	58-22-0	US 5460820	Formulation, transdermal, patch	Sexual dysfunction, female
estradiol	Estra-1,3,5(10)-triene-3,17-diol (17 $\beta$ )- [CAS]	50-28-2	EP 430491	Formulation, transdermal, systemic	Menopausal symptoms, general
estramustine	Estra-1,3,5(10)-triene-3,17-diol (17 $\beta$ )-, 3-bis(2-chloroethyl)carbamate] 17- [CAS]	2998-57-4 4891-15-0 52205-73-9			
<b>Estriol</b>		50-27-1		Anticancer, alkylating	Cancer, prostate
estrogen			WO 9924041	Menopausal disorders	Menopausal symptoms, general
<b>Estrone</b>		53-16-7			
eszopiclone	1-Piperazinecarboxylic acid, 4-methyl- 6-(5-chloro-2-pyridinyl)-6,7-dihydro-7-oxo-5H-pyrrolo(3,4-b)pyrazin-5-yl ester (S)- [CAS]	138729-47-2	US 5786357	Hypnotic/Sedative	Insomnia
<b>Etafedrine</b>		7681-79-0			
<b>Etafenone</b>		90-54-0			
<b>Etamiphyllin</b>		314-35-2			
<b>Etanercept</b>		185243-69-0			
<b>Etanidazole</b>		22668-01-5			
<b>Etaqualone</b>		7432-25-9			
<b>Eterobarb</b>		27511-99-5			
<b>Ethacridine</b>		442-16-0			
<b>Ethacrynic Acid</b>		58-54-8			
<b>Ethadione</b>		520-77-4			
<b>Ethambutol</b>		74-55-5			
<b>Ethamivan</b>		304-84-7			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Ethamsylate		2624-44-4			
Ethanalamine		141-43-5			
Ethaverine		486-47-5			
Ethchlorvynol		113-18-8			
Ethenzamide		938-73-8			
Ethiazide		1824-58-4			
Ethinamate		126-52-3			
Ethinyl Estradiol		57-63-6			
ethinyl estradiol	19-Norpregna-1,3,5(10)-trien-20-yne-3,17-diol, 3-(2-propanesulfonate), (17 $\alpha$ )-[CAS]	28913-23-7	DE 1949095	Formulation, modified-release, >24hr	Cancer, prostate
Ethionamide		536-33-4			
Ethisterone		434-03-7			
Ethoheptazine		77-15-6			
Ethopropazine		522-00-9			
Ethosuximide		77-67-8			
Ethotoin		86-35-1			
Ethoxzolamide		452-35-7			
Ethybenztropine		524-83-4			
Ethyl Alcohol		64-17-5			
Ethyl Biscoumacetate		548-00-5			
Ethyl Chloride		75-00-3			
Ethyl Dibunate		5560-69-0			
Ethyl Ether		60-29-7			
ethyl icosapentate	5,8,11,14,17-Eicosapentaenoic acid, ethyl ester, (all-Z)- [CAS]	86227-47-6	JP 61043143	Antithrombotic	Peripheral vascular disease
ethyl loflazepate	1H-1,4-Benzodiazepine-3-carboxylic acid, 7-chloro-5-(2-fluorophenyl)-2,3-dihydro-2-oxo-, ethyl ester [CAS]	29177-84-2	US 3857223	Anxiolytic	Anxiety, general
Ethyl Loflazepate		29177-84-2			
Ethylamine		75-04-7			
Ethylene		74-85-1			
Ethylestrenol		965-90-2			
Ethylidene Dicummarol		1821-16-5			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Ethylmethythiambutene		441-61-2			
Ethylmorphine		76-58-4			
Ethylnorepinephrine		536-24-3			
Ethynodiol ethynylcytidine		1231-93-2			
Etidocaine	Uridine, 3'-C-ethynyl- [CAS]	180300-49-6	WO 9618636	Anticancer, antimetabolite	Cancer, general
etidronate		36637-18-0			
Etidronic Acid	Phosphonic acid, (1-hydroxyethylidene)bis-, [CAS]	2809-21-4	US 4137309	Osteoporosis treatment	Osteoporosis
Etifelmin		341-00-4			
etifoxine	4H-3,1-Benzoxazin-2-amine, 6-chloro-N-ethyl-4-methyl-4-phenyl- [CAS]	21715-46-8	US 3725404	Anxiolytic	
Etilefrin		709-55-7			
etilevodopa					
	L-Tyrosine, 3-hydroxy-, ethyl ester [CAS]	37178-37-3	US 5354885	Antiparkinsonian	Parkinson's disease
etiprednol	androsta-1,4-diene-17-carboxylic acid, 17-[[[dichloroacetyl]oxy]-11-hydroxy-3-oxo-, ethyl ester, (11 $\beta$ ,17 $\alpha$ )-	199331-40-3		GI inflammatory/bowel disorders	Crohn's disease
Etiroxate		17365-01-4			
Etizolam		40054-69-1			
etodolac	Pyran[3,4-b]indole-1-acetic acid, 1,8-diethyl-1,3,4,9-tetrahydro- [CAS]	41340-25-4	US 3939178	Antiarthritic, other	Arthritis, osteo
Etodroxizine		17692-34-1			
etofenamate	Benzoic acid, 2-[[3-(trifluoromethyl)phenyl]amino]-, 2-(2-hydroxyethoxy)ethyl ester [CAS]	30544-47-9	GB 1285400	Anti-inflammatory, topical	Inflammation, general
etofibrate	3-Pyridinecarboxylic acid, 2-[2-(4-chlorophenoxy)-2-methyl-1-oxopropoxy]ethyl ester [CAS]	31637-97-5	US 3723446	Hypolipaeic/Antiatherosclerosis	
Etofylline		519-37-9			
etofylline clofibrate	Propanoic acid, 2-(4-chlorophenoxy)-2-methyl-, 2-(1,2,3,6-tetrahydro-1,3-dimethyl-2,6-dioxo-7H-purin-7-yl)ethyl ester [CAS]	54504-70-0	DE 2308826	Hypolipaeic/Antiatherosclerosis	
Etofylline Nicotinate		13425-39-3			



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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Etoglucid		1954-28-5			
Etomidate		33125-97-2			
Etomidoline		21590-92-1			
Etonitazene		911-65-9			
etonogestrel	18,19-Dinorpregn-4-en-20-yn-3-one, 13-ethyl-17-hydroxy-11-methylene, (17 $\alpha$ )-[CAS]	54048-10-1		Formulation, implant	Contraceptive, female
Etoferidone		52942-31-1			
etoposide	Furo[3',4':6,7]naphtho[2,3-d]-1,3-dioxol-6(5aH)-one, 9-[(4,6-O-ethylidene- $\beta$ -D-glucopyranosyl)oxy]-5,8,8a,9-tetrahydro-5-(4-hydroxy-3,5-dimethoxyphenyl)-, [5R-[5 $\alpha$ ], 5a $\beta$ , 8a $\beta$ , 9 $\beta$ (R*)]]- [CAS]	33419-42-0	GB 1205966	Anticancer, other	Cancer, testicular
etoposide phosphate	Furo[3',4':6,7]naphtho[2,3-d]-1,3-dioxol-6(5aH)-one, 5-[3,5-dimethoxy-4-(phosphonoxy)phenyl]-9-[(4,6-O-ethylidene- $\beta$ -D-glucopyranosyl)oxy]-5,8,8a,9-tetrahydro-, [5R-[5 $\alpha$ ], 5a $\beta$ , 8a $\beta$ , 9 $\beta$ (R*)]]- [CAS]	117091-64-2	EP 302473	Anticancer, other	Cancer, testicular
etoricoxib	2,3-Bipyridine, 5-chloro-6'-methyl-3-(4-methylsulfonyl)phenyl [CAS]	202409-33-4	WO 9803484	Antiarthritic, other	Arthritis, osteo
Etexadrol		28189-85-7			
Etazolol		73-09-6			
etrelnate	2,4,6,8-Nonatetraenoic acid, 9-(4-methoxy-2,3,6-trimethylphenyl)-3,7-dimethyl-, ethyl ester, (all-E)- [CAS]	54350-48-0	US 4215215	Antipsoriasis	
Etryptamine		2235-90-7			
Etymemazine		523-54-6			
Eucatropine		100-91-4			
Eugenol		97-53-0			
EUK-134	Manganese, chloro[[2,2'-(1,2-ethanediylbis[(nitrolo-kappaN)methylidene]]bis(6-methoxyphenolato-kappaO)]]-, (SP-5-13)-[CAS]	81065-76-1	US 6046188	Cardiovascular	Unspecified



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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
EUK-189			US 6046188	Radio/chemoprotective	Chemotherapy-induced injury, general
<b>Evan's Blue</b>		314-13-6			
everolimus	Rapamycin, 42-O-(2-hydroxyethyl)- [CAS]	159351-69-6	WO 9409010	Immunosuppressant	Transplant rejection, general
exalamide	Benzamide, 2-(hexyloxy)- [CAS]	53370-90-4	GB 726786	Antifungal	Infection, fungal, general
<b>Exametazime</b>		105613-48-7			
exatecan	10H,13H-Benzo[de]pyrano[3',4':6,7]indolizino[1,2-b]quinoline-10,13-dione, 1-amino-9-ethyl-5-fluoro-1,2,3,9,12,15-hexahydro-9-hydroxy-4-methyl-, (1S,9S)-, [CAS]	171335-80-1		Anticancer, other	Cancer, pancreatic
exemestane	Androsta-1,4-diene-3,17-dione, 6-methylene- [CAS]	107868-30-4	DE 3622841	Anticancer, hormonal	Cancer, breast
<b>Exifone</b>		52479-85-3			
exisulind	1H-Indene-3-acetic acid 5-fluoro-2-methyl-1-((4-(methylsulfonyl)phenyl)methylene)-, (Z)- [CAS]	59973-80-7		Anticancer, other	Polyp
<b>Exosurf®</b>		99732-49-7			
ezetimibe	2-Azetidinone, 1-(4-fluorophenyl)-3-[(3S)-3-(4-fluorophenyl)-3-hydroxypropyl]-4-(4-hydroxyphenyl)-, (3R,4S)- [CAS]	163222-33-1	US 5846966	Hypolipaeic/Antiatherosclerosis	Hypercholesterolaemia
<b>Factor IX</b>		9001-28-9			
<b>Factor VIII</b>		9001-27-8			
<b>Factor XIII</b>		9013-56-3			
fadolimidine	1H-Inden-5-ol, 2,3-dihydro-3-(1H-imidazol-4-ylmethyl)-, monohydrochloride [CAS]	189353-32-0	WO 9712874	Analgesic, other	Pain, general
<b>Fadrozole</b>		102676-47-1			
falecalcitriol	9,10-Secocholesta-5,7,10(19)-triene-1,3,25-triol, 26,26,26,27,27,27-hexafluoro-, (1Alpha,3S,5Z,7E)- [CAS]	83805-11-2	JP 03099022	Osteoporosis treatment	Hyperparathyroidism
famciclovir	1,3-Propanediol, 2-[2-(2-amino-9H-purin-9-yl)ethyl]-, diacetate (ester)- [CAS]	104227-87-4	JP 61065388	Antiviral, other	Infection, gynaecological

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famotidine	Propanimidamide, 3-[[[2-[(aminoiminomethyl)amino]-4-thiazolyl]methyl]thio]-N-(aminosulfonyl)- [CAS]	76824-35-6	US 4283408	Antiulcer	Ulcer, duodenal
fampridine	4-pyridinamine	504-24-5		Neuroprotective	Spinal cord injury
fandofloxacin	3-Quinolincarboxylic acid, 6-fluoro-1-(5-fluoro-2-pyridinyl)-1,4-dihydro-7-(4-methyl-1-piperazinyl)-4-oxo, [CAS]	164150-85-0 164150-99-6	US 5496947	Quinolone antibacterial	Infection, urinary tract
<b>Fantofarone</b>		114432-13-2			
faropenem daloxate	(5R,6S)-6-[1(R)-Hydroxyethyl]-2-[2(R)-tetrahydrofuryl]-2-penam-3-carboxylic acid-5-methyl-2-oxo-1,3-dioxol-4-ylmethyl ester			Beta-lactam antibiotic	Infection, general
faropenem	4-Thia-1-azabicyclo[3.2.0]hept-2-ene-2-carboxylic acid, 6-(1-hydroxyethyl)-7-oxo-3-(tetrahydro-2-furanyl)-, [5R-[3(R*),5Alpha,6Alpha(R*)]]-[CAS] L-Alanine, N-[(2S)-3-(acetylthio)-2-(1,3-benzodioxol-5-ylmethyl)-1-oxopropyl]-, phenylmethyl ester [CAS]	122547-49-3	EP 410727	Beta-lactam antibiotic	Infection, ocular
fasidotril	1H-1,4-Diazepine, hexahydro-1-(5-isquinolinylsulfonyl)- [CAS]	135038-57-2 103745-39-7 105628-07-7	EP 419327 EP 187371	Antihypertensive, renin system Neuroprotective	Hypertension, general Vasospasm, general
<b>Fazadinium Bromide</b>		49564-56-9			
febarbamate	2,4,6-(1H,3H,5H)-Pyrimidinetrione, 1-[2-[(aminocarbonyloxy]-3-butoxypropyl]-5-ethyl-5-phenyl- [CAS]	13246-02-1	US 3075983	Psychostimulant	
<b>Febuprol</b>		3102-00-9			
febuxostat	5-Thiazolecarboxylic acid, 2-[3-cyano-4-(2-methylpropoxy)phenyl]-4-methyl- [CAS]	144060-53-7	WO 9209279	Antigout	Hyperuricaemia
<b>Fedotozine</b>		123618-00-8			
felbamate	1,3-Propanediol, 2-phenyl-, dicarbamate [CAS]	25451-15-4	US 4868327	Antiepileptic	Epilepsy, general
felbinac	[1,1'-Biphenyl]-4-acetic acid [CAS] 3,5-Pyridinedicarboxylic acid, 4-(2,3-dichlorophenyl)-1,4-dihydro-2,6-dimethyl-, ethyl methyl ester [CAS]	5728-52-9 72509-76-3	EP 127840 US 4264611	Anti-inflammatory, topical Antihypertensive, other	
felodipine		56-59-7			Hypertension, general
<b>Felypressin</b>					

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Femoxetine		59859-58-4			
Fenbenicillin		1926-48-3			
fenbufen	[1,1'-Biphenyl]-4-butanoic acid, Gamma-oxo- [CAS]	36330-85-5	US 3784701	Anti-inflammatory	
Fenbutrazate		4378-36-3			
Fencamfamine		1209-98-9			
Fencamine		28947-50-4			
Fenclozic Acid		17969-20-9			
Fendiline		13042-18-7			
Fendosal		53597-27-6			
Fenethylline		3736081			
Fenfluramine		458-24-2			
Fenipentol		583-03-9			
fenofibrate	Propanoic acid, 2-[4-(4-chlorobenzoyl)phenoxy]-2-methyl-, 1-methylethyl ester [CAS]	26129-32-8 49562-28-9		Formulation, modified-release, <=24hr	Hyperlipidaemia, general
fenoldopam	1H-3-Benzazepine-7,8-diol, 6-chloro-2,3,4,5-tetrahydro-1-(4-hydroxyphenyl)- [CAS]	67227-56-9 67227-57-0	EP 22330	Antihypertensive, other	Hypertension, general
Fenoprofen		31879-05-7			
Fenoterol		13392-18-2			
fenoverine	10H-Phenothiazine, 10-[[4-(1,3-benzodioxol-5-ylmethyl)-1-piperazinyl]acetyl]-[CAS]	37561-27-6	FR 2092639	Antispasmodic	
Fenoxazoline		4846-91-7			
Fenoxedil		54063-40-0			
Fenozolone		15302-16-6			
Fenpentadiol		15687-18-0			
Fenpiprane		3540-95-2			
Fenpiverinium Bromide		125-60-0			
Fenproporex		15686-61-0			
Fenquizone		20287-37-0			
fenretinide	Retinamide, N-(4-hydroxyphenyl)- [CAS]	65646-68-6	BE 847942	Anticancer, other	Cancer, breast

Table IV

API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Fenspiride		5053066			
fentanyl	Propanamide, N-phenyl-N-[1-(2-phenylethyl)-4-piperidinyl]- [CAS]	437-38-7		Formulation, transmucosal, systemic	Anaesthesia, adjunct
Fentiazac		18046-21-4			
Fenticlor		97-24-5			
fenticonazole	1H-Imidazole, 1-[2-(2,4-dichlorophenyl)-2-[[4-(phenylthio)phenyl]methoxy]ethyl]- [CAS]	72479-26-6 73151-29-8	US 4221803	Antifungal	Infection, gynaecological
Fentonium Bromide		5868064			
fepradinol		36981-91-6			
Feprazone	Benzenemethanol, Alpha-[[[(2-hydroxy-1,1-dimethylethyl)amino]methyl]-, (+/-)- [CAS]	67704-50-1 63075-47-8		Anti-inflammatory, topical	
Ferric Sodium Edetate		30748-29-9			
ferrioxamine B		15708-41-5			
Ferrocholinate			WO 9426263	Septic shock treatment	Respiratory distress syndrome, adult
Ferrous Gluconate		1336-80-7 299-29-6			
ferumoxytol	Polyglucose sorbitol carboxymethyl ether-coated non-stoichiometric magnetite			Imaging agent	Diagnosis, cancer
fesoterodine	2-((1R)-3-(bis(1-methylethyl)amino)-1-phenylpropyl)-4-(hydroxymethyl)Phenyl ester, (2E)-2-butenedioate (1:1) (Salt) - [CAS]	286930-03-8			
fexofenadine	Benzenecacetic acid, 4-[1-hydroxy-4-[4(hydroxydiphenyl)methyl]-1-piperidinyl]butyl]-Alpha,Alpha-dimethyl-, [CAS]	153439-40-8 83799-24-0 138452-21-8	US 5375693	Antiallergic, non-asthma	Rhinitis, allergic, seasonal
Fibrostat			CA 2132416	Vulnery	Wound healing
fidarestat	Spiro(4H-1-benzopyran-4,4'-imidazolidine)-2-carboxamide, 6-fluoro-2,3-dihydro-2',5'-dioxo-, (2S-cis)-, [CAS]				
		136087-85-9	EP 418834	Symptomatic antidiabetic	Neuropathy, diabetic

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fiduxosin	8-Phenyl-3-[4-[(3aR,9bR)-1,3a,4,9b-tetrahydro-9-methoxy[1]benzopyrano[3,4-c]pyrrol-2(3H)-yl]butyl]pyrazino[2,3':4,5]thieno[3,2-d]pyrimidine-2,4(1H,3H)-dione	208993-54-8		Prostate disorders	Benign prostatic hyperplasia
finasteride	4-Azaandrosta-1-ene-17-carboxamide, N-(1,1-dimethylethyl)-3-oxo-, (5 $\alpha$ ), 17 $\beta$ )-[CAS]	98319-26-7	EP 155096	Prostate disorders	Benign prostatic hyperplasia
finrozole	Benzonitrile, 4-(3-(4-fluorophenyl)-2-hydroxy-1-(1H-1,2,4-triazol-1-yl)-propyl)-[CAS]	160146-16-7	EP 476944	Urological	Urinary retention
<b>Fipexide</b>		34161-24-5			
FK-960	N-(4-Acetyl-1-piperazinyl)-4-fluorobenzamide monohydrate- [CAS]	133920-70-4	WO 9101979	Cognition enhancer	Alzheimer's disease
<b>Flavopiridol</b>		146426-40-6			
flavoxate	4H-1-Benzopyran-8-carboxylic acid, 3-methyl-4-oxo-2-phenyl-, 2-(1-piperidinyl)ethyl ester [CAS]	15301-69-6			
flecainide	Benzamide, N-(2-piperidinylmethyl)-2,5-bis(2,2,2-trifluoroethoxy)-, [CAS]	3717-88-2	US 2921070	Urological	
floxacin	3-Quinolonecarboxylic acid, 6,8-difluoro-1-(2-fluoroethyl)-1,4-dihydro-7-(4-methyl-1-piperazinyl)-4-oxo- [CAS]	54143-55-4 54143-56-5		Formulation, modified-release, <=24hr	Fibrillation, atrial
<b>Flesinoxan</b>		79660-53-0 79660-72-3	US 4398029	Quinolone antibacterial	Infection, general
flibanserin	2H-Benzimidazol-2-one, 1,3-dihydro-1-(2-(4-(3-(trifluoromethyl)phenyl)-1-piperazinyl)ethyl)- [CAS]	98206-10-1			
floctafenine	Benzoic acid, 2-[[8-(trifluoromethyl)-4-quinolinyl]amino]-, 2,3-dihydroxypropyl ester [CAS]	167933-07-5		Reproductive/gonadal, general	Sexual dysfunction, female
flomoxef	5-Oxa-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[[(difluoromethyl)thio]acetyl]amino]-3-[[[1-(2-hydroxyethyl)-1H-tetrazol-5-yl]thio]methyl]-7-methoxy-8-oxo-, (6R-cis)-[CAS]	23779-99-9	US 3644368	Analgesic, NSAID	
		92823-03-5 99665-00-6	EP 128536	Cephalosporin, injectable	Infection, general



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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Flopropione		2295-58-1			
Florantyrone		519-95-9			
Flosequinan		76568-02-0			
Floxacinil		5250-39-5			
Floxuridine		50-91-9			
Fluacizine		30223-48-4			
Fluanisone		1480-19-9			
fluasterone	Androst-5-en-17-one, 16-fluoro-, (16 $\alpha$ )- [CAS]	112859-71-9	EP 246650	Cardiovascular	Keratosis
fluazacort	5H-Pregna-1,4-dieno[17,16-d]oxazole-3,20-dione, 21-(acetyloxy)-9-fluoro-11-hydroxy-2'-methyl-, (11 $\beta$ ,16 $\beta$ )- [CAS]	19888-56-3	US 3461119	Antipruritic/inflamm, non-allergic	
<b>Fluccloronide</b>		3693-39-8			
flucloxacillin		1847-24-1			
		34214-51-2		Formulation, other	Infection, general
fluconazole	1H-1,2,4-Triazole-1-ethanol, Alpha-(2,4-difluorophenyl)-Alpha-(1H-1,2,4-triazol-1-ylmethyl)- [CAS]	86386-73-4	EP 96569	Antifungal	Infection, dermatological
<b>Flucytosine</b>		2022-85-7			
fludarabine	9H-Purin-6-amine, 2-fluoro-9-(5-O-phosphono- $\beta$ -D-arabinofuranosyl)- [CAS]	75607-67-9			
<b>Fludeoxyglucose F<sup>18</sup></b>		21679-14-1	US 4357324	Anticancer, antimetabolite	Cancer, leukaemia, chronic lymphocytic
<b>Fludiazepam</b>		105851-17-0			
<b>Fludrocortisone</b>		3900-31-0			
<b>Flufenamic Acid</b>		127-31-1			
<b>Fluindione</b>		530-78-9			
		957-56-2			
flumazenil	4H-Imidazo[1,5-a][1,4]benzodiazepine-3-carboxylic acid, 8-fluoro-5,6-dihydro-5-methyl-6-oxo-, ethyl ester [CAS]				
<b>Flumecinol</b>		78755-81-4	EP 27214	Neurological	
<b>Flumequine</b>		56430-99-0			
<b>Flumethasone</b>		42835-25-6			
<b>Flumethiazide</b>		2135-17-3			
		148-56-1			



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flunarizine	Piperazine, 1-[bis(4-fluorophenyl)methyl]-4-[(3-phenyl-2-propenyl)-(E)- [CAS]	30484-77-6 52468-60-7 27848-84-6	GB 1268710	Antimigraine	
flunisolide	Pregna-1,4-diene-3,20-dione, 6-fluoro-11,21-dihydroxy-16,17-[(1-methylethylidene)bis(oxy)]-, (6Alpha,11B,16Alpha)- [CAS]	3385-03-3	US 3124571	Antiasthma	Rhinitis, allergic, general
flunitrazepam	2H-1,4-Benzodiazepin-2-one, 5-(2-fluorophenyl)-1,3-dihydro-1-methyl-7-nitro- [CAS]	1622-62-4	US 3116203	Hypnotic/Sedative	
Flunoxaprofen		66934-18-7			
Fluocinolone Acetonide		67-73-2			
Fluocinonide		356-12-7			
Fluocortin Butyl		41767-29-7			
Fluocortolone		152-97-6			
Fluorescein		2321-07-5			
Fluoresone		2924-67-6			
Fluorometholone		426-13-1			
Fluorosalan		4776061			
fluorouracil	2,4(1H,3H)-Pyrimidinedione, 5-fluoro- [CAS]	51-21-8		Formulation, transdermal, enhanced	Keratosi
fluoxetine	Benzenepropanamine, N-methyl-Gamma-[4-(trifluoromethyl)phenoxy]-, (+/-)- [CAS]	54910-89-3 56296-78-7	US 4314081	Antidepressant	Depression, general
Fluoxymesterone		76-43-7			
Flupentixol		2709-56-0			
Fluperolone		2119-75-7			
Fluphenazine		69-23-8			
flupirtine	Carbamic acid, [2-amino-6-[[[4-fluorophenyl)methyl]amino]-3-pyridinyl]-, ethyl ester [CAS]	33400-45-2 56995-20-1 75507-68-5	US 4481205	Analgesic, other	Pain, post-operative
Fluprednidene Acetate		1255-35-2			
Fluprednisolone		53-34-9			
Fluproquazone		40507-23-1			

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Flurandrenolide		1524-88-5			
Flurazepam		17617-23-1			
flurbiprofen	[1,1'-Biphenyl]-4-acetic acid, 2-fluoro-alpha-methyl- [CAS]	5104-49-4	US 3793457	Anti-inflammatory	
flurithromycin	Erythromycin, 8-fluoro-mono(ethyl butanedioate) (ester)- [CAS]	82730-23-2	EP 56291	Macrolide antibiotic	Infection, respiratory tract, lower
Fluogestone		2529-45-5			
Flurothyl		333-36-8			
Fluroxene		406-90-6			
Fluspirilene		1841-19-6			
flutamide	Propanamide, 2-methyl-N-[4-nitro-3-(trifluoromethyl)phenyl]- [CAS]	13311-84-7	US 4329364	Anticancer, hormonal	
flutazolam	Oxazolo[3,2-d][1,4]benzodiazepin-6(5H)-one, 10-chloro-11b-(2-fluorophenyl)-2,3,7,11b-tetrahydro-7-(2-hydroxyethyl)- [CAS]	27060-91-9	US 3905956	Anxiolytic	
fluticasone	Androsta-1,4-diene-17-carboxylic acid, 6,9-difluoro-11,17-dihydroxy-16-methyl-3-oxo-, S-(fluoromethyl) ester, (6Alpha,11beta,16Alpha,17Alpha)- [CAS]	80474-14-2 90566-53-3		Formulation, inhalable, solution	Asthma
flutoprazepam	2H-1,4-Benzodiazepin-2-one, 7-chloro-1-(cyclopropylmethyl)-5-(2-fluorophenyl)-1,3-dihydro- [CAS]	25967-29-7	GB 1253368	Anxiolytic	Psychosis, general
flutrimazole	1H-Imidazole, 1-[(2-fluorophenyl)(4-fluorophenyl)phenylmethyl]- [CAS]	119006-77-8	EP 352352	Antifungal	Infection, dermatological
Flutropium Bromide		63516-07-4			
fluvastatin	6-Heptenoic acid, 7-[3-(4-fluorophenyl)-1-(1-methylethyl)-1H-indol-2-yl]-3,5-dihydroxy-, monosodium salt, [R*,S*-(E)]-(±)- [CAS]	93957-55-2 93957-54-1	EP 114027	Hypolipaeic/Antiatherosclerosis	Hypercholesterolaemia
flvoxamine	1-Pentanone, 5-methoxy-1-[4-(trifluoromethyl)phenyl]-O-(2-aminoethyl)oxime, (E)- [CAS]	54739-18-3 61718-82-9	GB 1535226	Antidepressant	Depression, general, Obsessive-compulsive disorder
Folic Acid		59-30-3			
Folinic Acid		58-05-9			
Fomepizole		7554-65-6			

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fominoben	Benzamide, N-[3-chloro-2-[[methyl]2-(4-morpholinyl)-2-oxoethyl]amino]methyl]phenyl]- [CAS]	18053-31-1 24600-36-0	US 3661903	Respiratory stimulant	Eczema, general
<b>Fomivirsen</b>		144245-52-3			
<b>Fomocaine</b>		17692-39-6			
<b>Fonazine</b>		7456-24-8			
fondaparinux	Alpha-D-Glucopyranoside, methyl O-2-deoxy-6-O-sulfo-2-(sulfoamino)-Alpha-D-glucopyranosyl-(1-4)-O-β-D-glucopyranuronosyl-(1-4)-O-2-deoxy-3,6-di-glucopyranuronosyl-(1-4)-O-2-sulfo-Alpha-L-glucopyranosyl-(1-4)-O-2-O-sulfo-Alpha-L-idopyranuronosyl-(1-4)-2-deoxy-2-(sulfoamino)-, 6-(hydrogen sulfate) [CAS]	104993-28-4 114870-03-0		Anticoagulant	Thrombosis, venous
<b>Formebolone</b>		2454117			
formestane	Androst-4-ene-3,17-dione, 4-hydroxy-[CAS]	566-48-3	EP 346953	Anticancer, hormonal	Cancer, breast
<b>Formocortol</b>		2825-60-7			
formoterol	Formamide, N-[2-hydroxy-5-[1-hydroxy-2-[[2-(4-methoxyphenyl)-1-methylethyl]amino]ethyl]phenyl]-, (R*,R*)-(+/-)- [CAS]	43229-80-7 73573-87-2	GB 1415256	Antiasthma	Asthma
fosamprenavir	Carbamic acid, ((1S,2R)-3-(((4-aminophenyl)sulfonyl)(2-methylpropyl)amino)-1-(phenylmethyl)-2-(phosphonoxy)propyl)- C-((3S)-tetrahydro-3-furanyl ester, [CAS]	226700-81-8 34156-56-4 4428-95-9 63585-09-1		Antiviral, anti-HIV	Infection, HIV/AIDS
foscarnet	Phosphinecarboxylic acid, dihydroxy-, oxide, trisodium salt [CAS]	522-40-7	US 4839445	Antiviral, other	Infection, cytomegalovirus
<b>Fosfestrol</b>					
fosfluconazole	2,4-difluoro-Alpha,Alpha-bis(1H-1,2,4-triazol-1-ylmethyl)benzyl alcohol, dihydrogen phosphate (ester)	194798-83-9		Antifungal	Infection, fungal, general
fosfomycin	Phosphonic acid, (3-methyloxiranyl)-, (2R-cis)- [CAS]	23155-02-4 26016-98-8	GB 1223923	Antibiotic, other	Infection, general

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fosfomycin trometamol <b>Fosfosal</b>	Phosphonic acid, (3-methyloxiranyl)-, (2R-cis)-, compd. with 2-amino-2-(hydroxymethyl)-1,3-propanediol (1:1)- [CAS]	78964-85-9	EP 27597	Antibiotic, other	Infection, urinary tract
	L-Proline, 4-cyclohexyl-1-[[[2-methyl-1-(1-oxopropoxy)propoxy](4-phenylbutyl)phosphiny]acetyl]-, (2Alpha,4beta)- [CAS]	6064-83-1			
fosinopril	2,4-Imidazolidinedione, 5,5-diphenyl-3-[[phosphonoxy)methyl]- [CAS]	88889-14-9 98048-97-6	EP 63896	Antihypertensive, renin system	Hypertension, general
fosphenytoin	Phosphonic acid, 1-[[[(2-chloroethyl)nitrosoamino]carbonyl]amino]ethyl]-, diethyl ester [CAS]	92134-98-0 93390-81-9	US 4260769	Antiepileptic	Epilepsy, generalized, tonic-clonic
fotemustine <b>Fropenem</b>	1H-Carbazole-6-carboxamide, 2,3,4,9-tetrahydro-3-(methylamino)-, (R)- [CAS]	92118-27-9 106560-14-9	EP 117959	Anticancer, alkylating	Cancer, melanoma
frovatriptan		158747-02-5	WO 9922730	Antimigraine	Migraine
<b>Fructose</b>		57-48-7			
<b>Fructose-1,6-diphosphate</b>		488-69-7			
FTC	2(1H)-Pyrimidinone, 4-amino-5-fluoro-1-(2-(hydroxymethyl)-1,3-oxathiolan-5-yl)- (4R)			Antiviral, anti-HIV	Infection, HIV/AIDS
FTY-720	1,3-Propanediol, 2-amino-2-(2-(4-octylphenyl)ethyl)-, hydrochloride [CAS]	162359-56-0	WO 9408943	Immunosuppressant	Transplant rejection, general
fudosteine	Alanine, 3-((3-hydroxypropyl)thio)- [CAS]	13189-98-5	US 5047428	Antitussive	Cough
fulvestrant	Estra-1,3,5(10)-triene-3,17-diol, 7-[9-[[4,4,5,5,5-pentafluoropentyl)sulfinyl]nonyl]-, (7Alpha,17beta)- [CAS]	129453-61-8	EP 346014	Anticancer, hormonal	Cancer, breast
fumagilline	2,4,6,8-Decatetraenedioic acid, mono[5-methoxy-4-[2-methyl-3-(3-methyl-2-butenyl)oxiranyl]-1-oxaspiro[2.5]oct-6-yl]ester, [3R-[3Alpha,4Alpha(2R*,3R*),5beta,6beta(all-E)]]-[CAS]	23110-15-8		Protozoacide	Infection, GI tract

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Fumagillin		23110-15-8			
Furaltadone		139-91-3			
Furazabol		1239-29-8			
Furazolidone		67-45-8			
Furazolum Chloride		5118-17-2			
Furonazide		3460-67-1			
furosemide	Benzoic acid, 5-(aminosulfonyl)-4-chloro-2-[(2-furanylmethyl)amino]- [CAS]	54-31-9			
Fursultiamine		804-30-8		Formulation, modified-release, other	Hypertension, general
Furtrethonium		7618-86-2			
Fusidic Acid		06/03/6990			
G1, YM BioSciences	1-(5-bromofur-2-yl)-2-bromo-2-nitroethene			Antifungal	Infection, gynaecological
G25			WO 9804252	Antimalarial	Infection, malaria
GABA-A Alpha5 inverse agonist, Mer			WO 0206285	Cognition enhancer	Alzheimer's disease
gabapentin	Cyclohexanecarboxylic acid, 1-(aminomethyl)- [CAS]	60142-96-3	US 4152326	Antiepileptic	Epilepsy, general
gabexate	Benzoic acid, 4-[[6-[[aminiminomethyl]amino]-1-oxohexyl]oxy]-, ethyl ester, monomethanesulfonate [CAS]	39492-01-8 56974-61-9	US 3751447	GI inflammatory/bowel disorders	Pancreatitis
gaboxadol	isoxazolo[5,4-c]pyridin-3(2H)-one, 4,5,6,7-tetrahydro- [CAS]	64603-91-4	CA 1125288	Hypnotic/Sedative	Sleep disorder, general
Gadobenate		127000-20-8			
Dimeglumine		138071-82-6			
Gadobutrol		131410-48-5			
Gadodiamide		80529-93-7			
Gadopentetic Acid		120066-54-8			
Gadoteridol		131069-91-5			
Gadoversetamide		135326-11-3			
Gadoxetic Acid					

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galantamine	(4aS,6R,8aS)-6-Hydroxy-3-methoxy-11-methyl-5,6,9,10,11,12-hexahydro-4aH-benzofuro[3a,3,2-e,f][2]benzazepine			Formulation, modified-release, other	Alzheimer's disease
<b>Galanthamine</b>		357-70-0			
galarubicin	$\beta$ -Alanine, 2-[4-[(2,6-dideoxy-2-fluoro-Alpha-L-talopyranosyl)oxy]-1,2,3,4,6,11-hexahydro-2,5,12-trihydroxy-7-methoxy-6,11-dioxo-2-naphthacenyl]-2-oxoethyl ester, [CAS]	140637-82-7 140637-86-1	EP 424899	Anticancer, antibiotic	Cancer, breast
<b>Gallamine Triethiodide</b>		65-29-2			
<b>Gallic Acid</b>		149-91-7			
gallium maltolate	4H-Pyran-4-one, 3-hydroxy-2-methyl-, gallium complex			Anticancer, other	Cancer, myeloma
gallium nitrate	Nitric acid, gallium salt [CAS]	13494-90-1	US 4529593	Osteoporosis treatment	Hypercalcaemia of malignancy
gallopamil	Benzeneacetonitrile, Alpha-[3-[[2-(3,4-dimethoxyphenyl)ethyl]methylamino]propyl]-3,4,5-trimethoxy-Alpha-(1-methylethyl)-[CAS]	16662-47-8 56-12-2 38398-32-2	GB 1367677	Antianginal	Angina, general
<b><math>\gamma</math>-Aminobutyric Acid</b>					
<b>Ganaxolone</b>					
ganciclovir	6H-Purin-6-one, 2-amino-1,9-dihydro-9-[[2-hydroxy-1-(hydroxymethyl)ethoxy]methyl]-[CAS]	107910-75-8 82410-32-0	EP 49072	Antiviral, other	Infection, cytomegalovirus
ganirelix	[N-Ac-D-Nal,D-pCl-Phe,D-Pal,D-hArg(Et)2,hArg(Et)2,D-Ala[GnRH-[CAS]	124904-93-4	EP 312052	Releasing hormones	Infertility, female
ganstigmine	Carbamic acid, (2-ethylphenyl)-, (3aS,8aS)-1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethylpyrrolo[2,3-b]indol-5-yl ester,	223585-99-7	EP 1023297	Cognition enhancer	Alzheimer's disease



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gantofiban	1-Piperazineacetic acid, 4-[[[(5R)-3-[4-[[imino[(methoxycarbonyl)amino]methyl]phenyl]-2-oxo-5-oxazolidinyl]methyl]-ethyl]ester [CAS]	183547-57-1	EP 741133	Antithrombotic	Thrombosis, general
garenoxacin	3-Quinolonecarboxylic acid, 1-cyclopropyl-8-(difluoromethoxy)-7-((1R)-2,3-dihydro-1-methyl-1H-isindol-5-yl)-1,4-dihydro-4-oxo-monomethanesulfonate [CAS]	223652-82-2		Quinolone antibacterial	Infection, respiratory tract, lower
garnocestim	5-73-macrophage inflammatory protein 2Alpha (human gene gro2)- [CAS]	246861-96-1		Radio/chemoprotective	Chemotherapy-Induced injury, bone marrow, neutropenia
gatifloxacin	3-Quinolonecarboxylic acid, 1-cyclopropyl-6-fluoro-1,4-dihydro-8-methoxy-7-(3-methyl-1-piperazinyl)-4-oxo-, (+/-)- [CAS]	112811-59-3	EP 230295	Quinolone antibacterial	Infection, respiratory tract, general
<b>Gefarnate</b>		51-77-4			
gefitinib	4-Quinazolinamine, N-(3-chloro-4-fluorophenyl)-7-methoxy-6-(3-(4-morpholinyl)propoxy) [CAS]	184475-35-2	WO 9633980	Anticancer, other	Cancer, lung, non-small cell
gemcabene	6,6'-oxybis(2,2-dimethylhexanoate)	209789-08-2		Hypolipaeic/Antiatherosclerosis	Hyperlipidaemia, general
gemcitabine	Cytidine, 2'-deoxy-2', 2'-difluoro-, [CAS]	122111-03-9 95058-81-4	GB 2136425	Anticancer, antimetabolite	Cancer, pancreatic
gemeprost	Prosta-2,13-dien-1-oic acid, 11,15-dihydroxy-16,16-dimethyl-9-oxo-, methyl ester, (2E,11Alpha,13E,15R)- [CAS]	64318-79-2	GB 1540427	Prostaglandin	
gemfibrozil	Pentanoic acid, 5-(2,5-dimethylphenoxy)-2,2-dimethyl-, [CAS]	25812-30-0	US 3674836	Hypolipaeic/Antiatherosclerosis	Hyperlipidaemia, general
gemifloxacin	1,8-Naphthyridine-3-carboxylic acid, 7-(3-(aminomethyl)-4-(methoxymino)-1-pyrrolidinyl)-1-cyclopropyl-6-fluoro-1,4-dihydro-4-oxo- [CAS]	175463-14-6	US 5869670	Quinolone antibacterial	Infection, respiratory tract, general
gentamicin	Gentamicin [CAS]	1403-66-3		Formulation, implant	Infection, general
<b>Gentian Violet</b>		548-62-9			
<b>Gentiopicroin</b>		20831-76-9			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Gentisic Acid		490-79-9			
Gepefrine		18840-47-6			
gepirone	2,6-Piperidinedione, 4,4-dimethyl-1-[4-[4-(2-pyrimidinyl)-1-piperazinyl]butyl]- [CAS]			Formulation, modified-release, other	Depression, general
gestodene	18,19-Dinorpregna-4,15-dien-20-yn-3-one, 13-ethyl-17-hydroxy-, (17Alpha)- [CAS]	109852-02-0 60282-87-3	GB 1569135	Formulation, fixed-dose combinations	Contraceptive, female
gestodene + ethinyloest	18,19-Dinorpregna-4,15-dien-20-yn-3-one, 13-ethyl-17-hydroxy-, (17Alpha) mixt with 19-Norpregna-1,3,5(10)-trien-20-yn-13,17-diol (17Alpha)			Formulation, modified-release, >24hr	Contraceptive, female
Gestonorone Caproate		1253-28-7			
Gestrinone		16320-04-0			
γ-Hydroxybutyrate		591-81-1			
	(4S)-11-[(E)-[(1,1-dimethylethoxy)imino]methyl]-4-ethyl-4-hydroxy-1-12-dihydro-14H-pyrano[3',4':6,7]indolizino[1,2-b]quinoline-3,14(4H)-dione	292618-32-7		Anticancer, other	Cancer, brain
gimatecan		24870-04-0			
Giractide		4562-36-1			
Gitoxin	N,N'-Bis[2-[N-[2-(N2,N5-dimethyl-DL-lysylamino)-ethyl]carbamoyl]1H-indol-6-yl]-1H-indole-2,5-dicarboxamide				
GL-406349		3820-67-5 147245-92-9 28704-27-0	WO 5800808	Antifungal	Infection, fungal, general
Glafenine	L-Glutamic acid, polymer with L-alanine, L-lysine and L-tyrosine, [CAS]			Multiple sclerosis treatment	Multiple sclerosis, relapsing-remitting
glatiramer		26944-48-9			
Glibornuride	Benzenesulfonamide, N-[[[hexahydrocyclopenta[c]pyrrol-2(1H)-yl]amino]carbonyl]-4-methyl- [CAS]	21187-98-4	GB 1153982	Antidiabetic	Diabetes, Type II
gliclazide					

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
glimepiride	1H-Pyrrole-1-carboxamide, 3-ethyl-2,5-dihydro-4-methyl-N-[2-[4-[[[(4-methylcyclohexyl)amino]carbonyl]amino]sulfonyl]phenyl]ethyl]-2-oxo- [CAS]	93479-97-1	WO 9303724	Antidiabetic	Diabetes, Type II
<b><math>\gamma</math>-Linolenic Acid</b>		506-26-3			
glipizide	Pyrazinecarboxamide, N-[2-[4-[[[(cyclohexylamino)carbonyl]amino]sulfonyl]phenyl]ethyl]-5-methyl- [CAS]	29094-61-9	US 3669966	Antidiabetic	
	Benzenesulfonamide, N-[[[(cyclohexylamino)carbonyl]-4-[2-(3,4-dihydro-7-methoxy-4,4-dimethyl-1,3-dioxo-2(1H)-isoquinolinyl)ethyl]- [CAS]	33342-05-1	GB 1277847	Antidiabetic	Diabetes, general
	3-isoxazolecarboxamide, N-[2-[4-[[[(cyclohexylamino)carbonyl]amino]sulfonyl]phenyl]ethyl]-5-methyl- [CAS]	24477-37-0		Antidiabetic	Diabetes, general
<b>Glisoxepid</b>		25046-79-1			
<b>Glucametacin</b>		52443-21-7			
<b>Glucoheptonic Acid</b>		87-74-1			
<b>Gluconic Acid</b>		526-95-4			
glucosamine	D-Glucose, 2-amino-2-deoxy-, [CAS]	29031-19-4			
<b>Glucosulfone</b>		3416-24-8	DE 1953689	Antiarthritic, other	Arthritis, osteo
		554-18-7			
glufosfamide	$\beta$ -D-Glucopyranose, 1-(N,N'-bis(2-chloroethyl)phosphorodiamidate)- [CAS]	132682-98-5	DE 3835772	Anticancer, alkylating	Cancer, general
<b>Glutamic Acid</b>		56-86-0			
<b>Glutaraldehyde</b>		111-30-8			
<b>Glutethimide</b>		77-21-4			
<b>Glyburide</b>		10238-21-8			
<b>Glybuthiazol(e)</b>		535-65-9			
<b>Glybuzole</b>		1492-02-0			
<b>Glycerol</b>		56-81-5			
<b>Glycocyamine</b>		352-97-6			
<b>Glycol Salicylate</b>		87-28-5			
<b>Glyconiazide</b>		3691-74-5			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Glycopyrrolate		596-51-0			
Glyhexamide		451-71-8			
Glymidine		339-44-6			
Glypinamide		1228-19-9			
GMDP	N-acetylglucosaminy-N-acetylmuramyl dipeptide			Anti-infective, other	Infection, general
Gold Sodium Thiomalate		12244-57-4			
Gold Sodium Thiosulfate		10233-88-2			
goserelin	Luteinizing hormone-releasing factor (pig), 6-[O-(1,1-dimethylethyl)-D-serine]-10-deglycinamide-, 2-(aminocarbonyl)hydrazide [CAS]	65807-02-5	US 4100274	Releasing hormones	Cancer, prostate
GPI-1485	L-Proline, 1-(3,3-dimethyl-1,2-dioxopentyl)-, 3-(3-pyridinyl)propyl ester [CAS]	186452-09-5		Antiparkinsonian	Parkinson's disease
GPI-5693	2-(Phosphonomethyl)pentanedioic acid		US 5672592	Analgesic, other	Pain, neuropathic
Graftskin					
granisetron	1H-Indazole-3-carboxamide, 1-methyl-N-(9-methyl-9-azabicyclo[3.3.1]non-3-yl)-, endo- [CAS]	107007-99-8 109889-09-0	EP 200444	Antiemetic	Chemotherapy-induced nausea and vomiting
Grepafloxacin		119914-60-2			
griseofulvin	Spiro[benzofuran-2(3H),1'-[2]cyclohexane]-3,4'-dione, 7-chloro-2',4,6-trimethoxy-6'methyl-, (1'S-trans)- [CAS]	126-07-8		Formulation, dermal, topical	Infection, dermatological
Guaiaicol		90-05-1			
Guaiapate		852-42-6			
Guaiazulene		489-84-9			
Guaifenesin		93-14-1			
guaimesal	4H-1,3-Benzodioxin-4-one, 2-(2-methoxyphenoxy)-2-methyl- [CAS]	81674-79-5	GB 2098201	Anti-inflammatory	
Guamecycline		16545-11-2			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Guanabenz		5051-62-7			
Guanadrel		40580-59-4			
Guanethidine		55-65-2			
Guanfacine		29110-47-2			
Guanoxabenz		24047-25-4			
Guanoxan		2165-19-7			
gugulipid	Pregna-4,17(20)-diene-3,16-dione [CAS]	95975-55-6	EP 447706	Hypolipaeic/Antiatherosclerosis	
Gusperimus		104317-84-2			
GW-280430A	(Z)-2-Chlorofumaric acid 1-[3-{[6,7-dimethoxy-2(S)-methyl-1(R)-(3,4,5-trimethoxybenzyl)-1,2,3,4-tetrahydroisoquinolinium-2-yl]propyl}]			Muscle relaxant	Anaesthesia, adjunct
GW-320659	[2S,3S,5R]-2-[3,5-difluorophenyl]-3,5-dimethyl-2-morpholinol			Anorectic/Antiobesity	Obesity
GYKI-16084	(+)-R-2-[3-[N-(2-Benzo[1,4]dioxanylmethyl)amino]-1-propyl]-3(2H)-pyridazinone hydrochloride		US 6194411	Prostate disorders	Benign prostatic hyperplasia
Hachimycin		1394-02-1			
Halazepam		23092-17-3			
Halcinonide		3093-35-4			
halobetazol	Pregna-1,4-diene-3,20-dione, 21-chloro-6,9-difluoro-11-hydroxy-16-methyl-17-(1-oxopropoxy)-, (6Alpha,11Beta,16Beta)- [CAS]	66852-54-8	US 4619921	Antipsoriasis	Psoriasis
halofantrine	9-Phenanthrenemethanol, 1,3-dichloro-Alpha-[2-(dibutylamino)ethyl]-6-(trifluoromethyl)- [CAS]	36167-63-2 69756-53-2	EP 138374	Antimalarial	Infection, malaria
halometasone	Pregna-1,4-diene-3,20-dione, 2-chloro-6,9-difluoro-11,17,21-trihydroxy-16-methyl-, (6Alpha,11Beta,16Alpha)- [CAS]	50629-82-8	US 4076737	Antipruritic/inflamm, allergic	
Haloperidol		52-86-8			
Halopredone		57781-14-3			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Haloprogyn		777-11-7			
Halopropane		679-84-5			
Halothane		151-67-7			
Haloxazolam		59128-97-1			
harkoseride	2(R)-Acetamido-N-benzyl-3-methoxypropionamide		WO 9733861	Antiepileptic	Epilepsy, general
HE-2000	16Alpha-Bromo-3β-hydroxy-5Alpha-androstane-17-one			Antiviral, anti-HIV	Infection, HIV/AIDS
Healos			WO 9714376	Musculoskeletal	Regeneration, bone
Hematoporphyrin		14459-29-1			
Hepronicate		7237-81-2			
Heptabarbital		509-86-4			
Heptaminol		372-66-7			
Hetacillin		3511-16-8			
Hetastarch		9004-62-0			
Hexachlorophene		70-30-4			
Hexadimethrine Bromide		28728-55-4			
Hexafluorenium Bromide		317-52-2			
Hexamethonium		60-26-4			
Hexamidine		3811-75-4			
Hexapropymate		358-52-1			
Hexedine		5980-31-4			
Hexestrol		84-16-2			
Hexestrol Bis(β-dlethylaminoethyl ether)		2691-45-4			
Hexethal		144-00-3			
Hexetidine		141-94-6			
Hexobarbital		56-29-1			



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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Hexobendine		54-03-5			
Hexocyclium Methyl Sulfate		115-63-9			
Hexoprenaline		3215-70-1			
Hextend	Hextend [CAS]	235746-51-7	US 5407428	Plasma substitute	Surgery adjunct
Hexylcaine		532-76-3			
HF-0299	11b-hydroxy androstenedione			Osteoporosis treatment	Osteoporosis
HGP-2	Benzeneacetic acid, 4-[2-hydroxy-3-[(1-methylethyl)amino]propoxy]-, 2-tricyclo[3.3.1.1 <sup>3,7</sup> dec-1-ylethyl ester, (2Z)-2-butenedioate (1:1) (salt) [CAS]	121009-31-2		Antiglaucoma	Glaucoma
HGP-6 <sup>a</sup>	8-Azoniabicyclo[3.2.1]octane, 3-(3-ethoxy-1,3-dioxo-2-phenylpropoxy)-8,8-dimethyl-, (3-endo)-, methyl sulfate [CAS]	113932-41-5		Antiepileptic	Epilepsy, general
hidrosmin	Hydrosmin- [CAS]	120250-44-4		Vasoprotective, systemic	
histamine	histamine	51-45-6	EP 0493468	Anticancer, immunological	Cancer, melanoma
Histapyrrodine		493-80-1			
histrelin	Luteinizing hormone-releasing factor (pig), 6-[1-(phenylmethyl)-D-histidine]-9-(N-ethyl-L-prolinamide)-10-deglycinamide- [CAS]	76712-82-8	EP 217659	Releasing hormones	Precocious puberty
HM-101	HM 101 [CAS]	217311-70-1		Osteoporosis treatment	Osteoporosis
HMN-214	(E)-4-[2-[2-(p-methoxybenzenesulfonamide)-phenyl]ethenyl]pyridine-1-oxide			Anticancer, other	Cancer, general
Homatropine		87-00-3			
Homocamfin		535-86-4			
Homochlorcyclizine		848-53-3			
Hopantenic Acid		18679-90-8			
HP-228	Glycinamide, N-acetyl-L-norleucyl-L-glutamyl-L-histidyl-D-phenylalanyl-L-arginyl-D-tryptophyl- [CAS]	172617-89-9	EP 759770	Analgesic, other	Pain, post-operative

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Hyperzine A		102518-79-6			
hyaluronan	Hyaluronic acid [CAS]	9004-61-9		Formulation, other	Restenosis
Hycanthone		3105-97-3			
Hydnocarpic Acid		459-67-6			
Hydralazine		86-54-4			
Hydrastine		118-08-1			
Hydrastinine		6592-85-4			
Hydrochlorothiazide		58-93-5			
hydrocodone	Morphinan-6-one, 4,5-epoxy-3-hydroxy-17-methyl-, (5Alpha)- [CAS]	466-99-9 125-29-1		Formulation, modified-release, other	Pain, general
Hydrocortamate		76-47-1			
hydrocortisone	Pregn-4-ene-3,20-dione, 21-(acetyloxy)-11-hydroxy-17-(1-oxopropoxy)-, (11S)-[CAS]	74050-20-7 50-23-7	DE 2826257	Dermatological	Unspecified
hydrocortisone butyrate propio	Pregn-4-ene-3,20-dione, 11-hydroxy-17-(1-oxobutoxy)-21-(1-oxopropoxy)-, (11S)-[CAS]	72590-77-3	DE 2910899	Antipruritic/inflamm, allergic	
Hydroflumethiazide		135-09-1			
hydromorphone	Morphinan-6-one 4,5-epoxy-3-hydroxy-17-methyl-, (5Alpha)-, mixt with acetamide, N-(4-hydroxyphenyl)-, mixt with morphinan-6-one, 17-(cyclopropylmethyl)-4,5-epoxy-3,14-dihydroxy-, (5Alpha)-	103-90-2 16590-41-3 466-99-9		Formulation, fixed-dose combinations	Pain, general
Hydroquinidine		1435-55-8			
Hydroquinine		522-66-7			
Hydroquinone		123-31-9			
Hydroxocobalamin		13422-51-0			
Hydroxyamphetamine		1518-86-1			
Hydroxychloroquine		118-42-3			
Hydroxydione		53-10-1			
Hydroxypethidine		468-56-4			
Hydroxyphenamate		50-19-1			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Hydroxypropyl Cellulose		9004-64-2			
Hydroxystilbamide		495-99-8			
Hydroxytetracaine		490-98-2			
Hydroxyzine		68-88-2			
Hylan G-F 20					
Hymecromone		90-33-5			
hyoscyamine	benzeneacetic acid, Alpha(hydroxymethyl)-, 8-methyl-8-azabicyclo [3.2.1]oct-3-yl ester, [3(S)-endo],	101-31-5		Formulation, oral, orally-disintegrating	Ulcer, GI, general
hypericin	Phenanthro[1,10,9,8-opqra]perylene-7,14-dione, 1,3,4,6,8,13-hexahydroxy-10,11-dimethyl- [CAS]	548-04-9		Anticancer, other	Cancer, brain
IACFT		180468-34-2			
ibandronic acid	Phosphonic acid, [1-hydroxy-3-(methylpentylamino)propylidene] bis- [CAS]	114084-78-5	EP 252504	Osteoporosis treatment	Hypercalcaemia of malignancy
ibopamine	Propanoic acid, 2-methyl-, 4-[2-(methylamino)ethyl]-1,2-phenylene ester- [CAS]	66195-31-1	GB 1551661	Cardiostimulant	Heart failure
ibopamine	Propanoic acid, 2-methyl-, 4-[2-(methylamino)ethyl]-1,2-phenylene ester- [CAS]	66195-31-1		Formulation, mucosal, topical	Surgery adjunct
Ibritumomab Tiuxetan		206181-63-7			
ibrolipim	Phosphonic acid, [[4-[[[4-bromo-2-cyanophenyl)amino]carbonyl]phenyl]methyl],-, diethyl ester [CAS]	133208-93-2	EP 402033	Hypolipaeamic/Antiatherosclerosis	Hypertriglyceridaemia
ibudilast	1-Propanone, 2-methyl-1-[2-(1-methylethyl)pyrazolo[1,5-a]pyridin-3-yl]- [CAS]	50847-11-5	EP 215438	Antiasthma	Asthma
Ibufenac		1553-60-2			
ibuprofen piconol	Benzenecacetic acid, Alpha-methyl-4-(2-methylpropyl)-, 2-pyridinylmethyl ester [CAS]	64622-45-3	DE 2658610	Antipruritic/inflamm, non-allergic	Eczema, contact

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
ibuprofen	Benzeneacetic acid, Alpha-methyl-4-(2-methylpropyl)- [CAS]	15687-27-1		Formulation, modified-release, other	Inflammation, general
<b>Ibuproxam</b>		<b>53648-05-8</b>			
ibutilide	Methanesulfonamide, N-[4-(4-(ethylheptylamino)-1-hydroxybutyl)phenyl]-, (+/-)-, [CAS]	122647-31-8 122647-32-9	JP 60239458	Antiarrhythmic	Fibrillation, atrial
ICA-17043			US 6288122	Antisickling	Anaemia, sickle cell
icodextrin	Dextrin- [CAS]	9004-53-9		Urological	Renal failure
idarubicin	5,12-Naphthacenedione, 9-acetyl-7-[(3-amino-2,3,6-trideoxy-Alpha-L-lyxohexopyranosyl)oxy]-7,8,9,10-tetrahydro-6,9,11-trihydroxy-, (7S-cis)- [CAS]	58957-92-9 86189-66-4	US 4471052	Anticancer, antibiotic	Cancer, leukaemia, acute lymphocytic
<b>Idazoxan</b>		<b>79944-58-4</b>			
IdB-1016	2-(2,3-dihydro-2-(4-hydroxy-3-methoxyphenyl)-3-(hydroxymethyl)-1,4-benzodioxin-6-yl)-2,3-dihydro-3,5,7-trihydroxy-4H-1-benzopyran-4-one phosphatidylcholine complex	134499-06-2	EP 209038	Anticancer, hormonal	Cancer, ovarian
idebenone	2,5-Cyclohexadiene-1,4-dione, 2-(10-hydroxydecyl)-5,6-dimethoxy-3-methyl- [CAS]	58186-27-9	EP 58057	Neuroprotective	Ischaemia, cerebral
IDN-5109	4-Hexenoic acid, 3-[[[(1,1-dimethylethoxy)carbonyl]amino]-2-hydroxy-5-methyl-, (3aS,4R,7R,8aS,9S,10aR,12aS,12bR,13S,13aS)-7,12a-bis(acetyloxy)-13-(benzoyloxy)-3a,4,7,8,8a,9,10,10a,12,12a,12b,13-dodecahydro-9-hydroxy-5,8a,14,14-dodecamethyl-2,8-dioxo-6,13a-methanotetramethyl-2,8-dioxo-6,13a-methano-1,3aH-oxeto [2",3",5",6"] benzo[1,2:4,5] cyclodeca [1,2-d] dioxyl-4-yl ester, 2R,3S) [CAS]	186348-05-0	US 5264591	Anticancer, other	Cancer, colorectal
<b>Idoxifene</b>		<b>116057-75-1</b>			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
idaraparinux	Alpha-D-Glucopyranoside, methyl O-2,3,4-tri-O-methyl-6-O-sulfo-Alpha-D-glucopyranosyl-(1-4)-O-2,3-di-O-methyl-β-D-glucopyranuronosyl-(1-4)-O-2,3,6-tri-O-sulfo-Alpha-D-glucopyranosyl-(1-4)-O-2,3-di-O-methyl-Alpha-L-idopyranuronosyl-(1-4)-, tris(hydrogen sulfate) nonasodium salt [CAS]	149920-56-9	AU 698456	Antithrombotic	Thrombosis, venous
idrocilamide	2-Propenamide, N-(2-hydroxyethyl)-3-phenyl- [CAS]	6961-46-2	US 3659014	Anti-inflammatory, topical	
ifenprodil	(7)-2-(4-benzyl piperidino)-1-p-hydroxyphenylpropanol tartrate	23210-58-4 23210-56-2	US 3509164	Neuroprotective	
ifosfamide	2H-1,3,2-Oxazaphosphorin-2-amine, N,3-bis(2-chloroethyl)tetrahydro-,2-oxide [CAS]	3778-73-2	US 3732340	Anticancer, alkylating	Cancer, lung, general
iguratimod	N-[3-(Formylamino)-4-oxo-6-phenoxy-4H-chromen-7-yl] methanesulfonamide	123663-49-0	DE 3834204	Antiarthritic, other	Arthritis, rheumatoid
ilaprazole	1H-Benzimidazole, 2-(((4-methoxy-3-methyl-2-pyridinyl) methyl)sulfinyl)-5-(1H-pyrrol-1-yl)- [CAS]	172152-36-2	US 5703097	Antilulcer	Ulcer, GI, general
ilomastat	Butanediamide, N4-hydroxy-N1-(1-(1H-indol-3-ylmethyl)-2-(methylamino)-2-oxoethyl)-2-(2-methylpropyl)-, (S-(R*, S*))-[CAS]	142880-36-2	US 5892112	COPD treatment	Emphysema, smoking-related
iloperidone	Ethanone, 1-[4-[3-[4-(6-fluoro-1,2-benzisoxazol-3-yl)-1-piperidinyl]propoxy]-3-methoxyphenyl]- [CAS]	133454-47-4	US 5776963	Neuroleptic	Schizophrenia
iloprost trometamol	Pentanoic acid, 5-[hexahydro-5-hydroxy-4-(3-hydroxy-4-methyl-1-octen-6-ynyl)-2(1H)-pentalenylidene]- [CAS]	78919-13-8	DE 3417638	Prostaglandin	Peripheral vascular disease
ILX23-7553	1Alpha,25-Hydroxy-16-yne vitamin D3			Anticancer, other	Cancer, general

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
imatinib	4-((Methyl-1-piperazinyl)methyl)-N-[4-methyl-3-[[4-(3-pyridinyl)-2-pyrimidinyl]amino]-phenyl]benzamide methanesulfonate	152459-95-5	US 5521184	Anticancer, other	Cancer, leukaemia, chronic myelogenous
imidapril	4-Imidazolidinecarboxylic acid, 3-[2-[[1-(ethoxycarbonyl)-3-phenylpropyl]amino]-1-oxopropyl]-1-methyl-2-oxo-, [4S-[3(R*(R*),4R*)]- [CAS]	89371-37-9 89396-94-1	EP 95163	Antihypertensive, renin system, Musculoskeletal	Hypertension, general, Cachexia
imidazole salicylate	Benzoic acid, 2-hydroxy-, compd. with 1H-imidazole (1:1) [CAS]	36364-49-5	US 4329340	Anti-inflammatory	Pain, general
imipenem	1-Azabicyclo[3.2.0]hept-2-ene-2-carboxylic acid, 6-(1-hydroxyethyl)-3-[[2-[[[iminomethyl]amino]ethyl]thio]-7-oxo-, [5R, [5Alpha,6Alpha(R*)]]- [CAS]	64221-86-9 74431-23-5 81129-83-1	GB 1570990	Beta-lactam antibiotic	Infection, general
Imipramine		50-49-7			
Imipramine N-Oxide		6829-98-7			
imiquimod	1H-imidazo[4,5-c]quinolin-4-amine, 1-(2-methylpropyl)- [CAS]	99011-02-6	EP 145340	Antiviral, other	Infection, human papilloma virus
Imolamine		318-23-0			
implitapide	Benzeneacetamide, Alpha-cyclopentyl-4-((2,4-dimethyl-9H-pyrido(2,3-b)indol-9-yl)methyl)-N-((1R)-2-hydroxy-1-phenylethyl)- (AlphaS)- [CAS]	177469-96-4 13425-98-4 99323-21-4	EP 705831	Hypolipaeamic/Antiatherosclerosis	Atherosclerosis
Improsulfan					
Inaperisone					
incadronate	Phosphonic acid, [(cycloheptylamino)methylene]bis-, [CAS]	138330-18-4		Musculoskeletal	Hypercalcaemia of malignancy
Incadronic Acid		124351-85-5			
Indalpine		63758-79-2			
Indanazoline		40507-78-6			
indapamide	4-chloro-N-(2-methylindolin-1-yl)-3-sulfamoylbenzamide	26807-65-8	GB 1203691	Antihypertensive, diuretic	Hypertension, general
Indecainide		74517-78-5			



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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
indeloxazine	Morphenine, 2-[(1H-inden-7-yloxy)methyl]- [CAS]	60929-23-9 65043-22-3	JP 52083773	Cognition enhancer	Alzheimer's disease
Indeloxazine		65043-22-3			
		30190-87-5			
indenolol	2-Propanol, 1-[1H-inden-4(or 7)-yloxy]-3- [(1-methylethyl)amino]- [CAS]	60607-68-3 68906-88-7	GB 1290343	Antihypertensive, adrenergic	
indinavir	D-erythro-Pentonamide, 2,3,5-trideoxy-N-(2,3-dihydro-2-hydroxy-1H-inden-1-yl)-5-(2-(((1,1-dimethylethyl)amino)carbonyl)-4-(3-pyridinylmethyl)-1-piperazinyl)-2-(phenylmethyl), [1S-(1Alpha(R*),2Alpha)]-, [CAS]	150378-17-9 157810-81-6	EP 0541168	Antiviral, anti-HIV	Infection, HIV/AIDS
indiplon	Acetamide, N-methyl-N-(3-(3-(2-thienylcarbonyl)pyrazolo(1,5-a) pyrimidin-7-yl)phenyl)- [CAS]	325715-02-4	US 6399621	Hypnotic/Sedative	Insomnia
indisetrone	1H-Indazole-3-carboxamide, N-(3,9-dimethyl-3,9-diazabicyclo(3.3.1)non-7-yl)-, diendo- [CAS]	160472-97-9		Antiemetic	Nausea and vomiting, general
indisulam	1,4-Benzenedisulfonamide, N-(3-chloro-1H-indol-7-yl)- [CAS]	165668-41-7		Anticancer, other	Cancer, lung, non-small cell
Indobufen		63610-08-2			
Indocyanine Green		3599-32-4			
indometacin	1H-Indole-3-acetic acid, 1-(4-chlorobenzoyl)-5-methoxy-2-methyl- [CAS]	53-86-1		Formulation, modified-release, other	Inflammation, general
Indoprofen		31842-01-0			
		26844-12-2			
indoramin	Benzamide, N-[1-[2-(1H-indol-3-yl)ethyl]-4-piperidinyl]- [CAS]	38821-52-2	GB 1218570	Antihypertensive, adrenergic	
Inducterm			US 5993810	Labour inducer	Labour, induction
Infliximab		170277-31-3			
Inosine Pranobex		36703-88-5			
Inositol		87-89-8			
Inositol Niacinate		6556112			
Iobenguane		80663-95-2			
Iobenzamic Acid		3115057			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
lobitridol		136949-58-1			
locarmic Acid		10397-75-8			
locetamic Acid		16034-77-8			
lodamide		440-58-4			
iodine	iodine [CAS]	7553-56-2		Formulation, oral, other	Fibrocystic breast disorder
lodipamide		606-17-7			
lodixanol		92339-11-2			
lodoalphonic Acid		577-91-3			
iodochlorhydroxyquin	5-Chloro-7-iodo-8-quinolinol	130-26-7		Cognition enhancer	Alzheimer's disease
lodoform		75-47-8			
lodopyracet		300-37-8			
lodopyrrole		87-58-1			
lodoquinol		83-73-8			
lofetamine <sup>123</sup> I		75917-92-9			
loglycamic Acid		2618-25-9			
lohexol		66108-95-0			
lomeglamic Acid		25827-76-3			
lomeprol		78649-41-9			
lopamidol		60166-93-0			
lopanoic Acid		96-83-3			
lopentol		89797-00-2			
lophenodylate		99-79-6			
lophenoxic Acid		96-84-4			
lopromide		73334-07-3			
loproncic Acid		41473-08-9			
lopydol		5579-92-0			
lopydone		5579-93-1			
lothalamic Acid		2276-90-6			
lotrolan		79770-24-4			
loversol		87771-40-2			
loxaglic Acid		59017-64-0			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Iloxilan	(3R,4R)-(delta6)-THC-DMH-11-oic acid	107793-72-6	WO 9401429	Analgesic, other	Pain, neuropathic
IP-751					
Ipidacrine		62732-44-9			
	Stigmaster-15-one, 22,29-epoxy-3,4,6,7,29-pentahydroxy-, (3Alpha,4B,5Alpha,6Alpha,7B,14B,22S)-[CAS]	137571-30-3	US 6046185	Antiasthma	Asthma
IPL-576092					
Ipodate		5587-89-3			
ipratropium bromide		66985-17-9		Formulation, inhalable, solution	Chronic obstructive pulmonary disease
		22254-24-6			
ipratropium	(endo, syn)-(±)-3-(3-Hydroxy-1-oxo-2-phenylpropoxy)-8-methyl-8-(1-methylethyl)-8-azoniabicyclo[3.2.1]octane			Formulation, inhalable, topical	Asthma
		7248-21-7			
iprazochrome				Haemostatic	
ipriflavone		35212-22-7	EP 214647	Osteoporosis treatment	Osteoporosis
Iprindole		5560-72-5			
Iproclozide		3544-35-2			
Iproniazid		54-92-2			
Ipsapirone		95847-70-4			
	2-n-butyl-4-spirocyclopentane-1-[[[2'-tetrazol-5-yl)biphenyl-4-yl)methyl]-2-imidazolin-5-one				
irbesartan		138402-11-6	WO 9114679	Antihypertensive, renin system	Hypertension, general
IRFI-042	Butanedioic acid, mono[2-[2-(acetylthio)ethyl]-2,3-dihydro-4,6,7-trimethyl-5-benzofuranyl] ester, (+/-)-[CAS]	134867-62-2	US 5114966	Cardiovascular	Atherosclerosis
IRFI-165	N-Cyclopentyl-1-methylimidazo[1,2-a]quinoxalin-4-amine	191349-26-5	EP 865442	Antidepressant	Depression, general
Iridomyrmecin		485-43-8			

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irindalone	-Imidazolidinone, 1-[2-[4-[3-(4-fluorophenyl)-2,3-dihydro-1H-inden-1-yl]-1-piperazinyl]ethyl]-, (1R-trans)- [CAS]	104113-57-7 96478-43-2	EP 183349	Antidepressant	Depression, general
<b>Irinotecan</b>		97682-44-5			
irofulven	Spiro[cyclopropane-1,5'-[5H]inden]-7'(6H)-one, 6'-hydroxy-2',4',6'-trimethyl-, (R)- [CAS]	125392-76-9	US 5563176	Anticancer, other	Cancer, prostate
<b>Iron Sorbitex</b>		1338-16-5			
		57381-26-7			
irsogladine	1,3,5-Triazine-2,4-diamine, 6-(2,5-dichlorophenyl)- [CAS]	57381-28-9 57381-33-6	US 4657907	Antihypertensive, diuretic	Hypertension, general
IS-741	Cyclohexanecarboxamide, N-[2-[(ethylsulfonyl)amino]-5-(trifluoromethyl)-3-pyridinyl]- [CAS]	141283-87-6	EP 465913	GI inflammatory/bowel disorders	Pancreatitis
isaglitazone	2,4-Thiazolidinedione, 5-[[6-[(2-fluorophenyl)methoxy]-2-naphthalenyl]methyl]- [CAS]	161600-01-7	US 5594016	Antidiabetic	Diabetes, Type II
ISAtx-247			NZ 502362	Immunosuppressant	Transplant rejection, general
<b>Isbogrel</b>		89667-40-3			
isepamicin	D-Streptamine, O-6-amino-6-deoxy-Alpha-D-glucopyranosyl-(1-4)-O-[3-deoxy-4-C-methyl-3-(methylamino)-β-L-arabinopyranosyl-(1-6)]-N1-(3-amino-2-hydroxy-1-oxopropyl)-2-deoxy-, (S)- [CAS]	58152-01-5 58152-03-7	US 4029882	Aminoglycoside antibiotic	Infection, dermatological
<b>Isoaminile</b>		77-51-0			
<b>Isobutyl p-Aminobenzoate</b>		94-14-4			
<b>Isocarboxazid</b>		59-63-2			
isoconazole	1-[2-(2,6-dichlorobenzoyloxy)-2-(2,4-dichlorophenyl)ethyl]	24168-96-5 27523-40-6	GB 1244530	Antifungal	Infection, fungal, general
<b>Isoetharine</b>		530-08-5			

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isofloxythepin	1-Piperazineethanol, 4-[3-fluoro-10,11-dihydro-8-(1-methylethyl)dibenzo[b,f]thiophen-10-yl]-[CAS]	106819-39-0 106819-41-4 70931-18-9	GB 2010843	Neuroleptic	
isoflurane	Ethane, 2-chloro-2-(difluoromethoxy)-1,1,1-trifluoro- [CAS]	26675-46-7	US 3535388	Anaesthetic, inhalation	Anaesthesia
Isoflurophate		55-91-4			
Isoladol		530-34-7			
Isomethadone		466-40-0			
Isomethheptene		503-01-5			
Isoniazid		54-85-3			
Isonixin		57021-61-1			
Isopromethazine		303-14-0			
Isopropamide Iodide		71-81-8			
Isopropyl Alcohol		67-63-0			
	5-Heptenoic acid, 7-(3,5-dihydroxy-2-(3-oxodecyl)cyclopentyl)-, 1-methylethylester, (1R-(1Alpha(Z), 2S,3Alpha,5Alpha))-[CAS]	120373-24-2	EP 289349	Prostaglandin	Glaucoma
isopropyl unoprostone		7683-59-2			
Isoproterenol		652-67-5			
Isosorbide		87-33-2			
isosorbide dinitrate	D-Glucitol, 1,4:3,6-dianhydro-, dinitrate [CAS]	16051-77-7		Formulation, modified-release, other	Angina, general
isosorbide mononitrate	D-Glucitol, 1,4:3,6-dianhydro-, 5-nitrate [CAS]	482-15-5		Formulation, modified-release, other	Angina, general
Isothipendyl		4759-48-2			
isotretinoin	Retinoic acid, 13-cis- [CAS]	533-32-4	US 4843096	Antiacne	Acne
Isovaleryl Diethylamide		55453-87-7			
Isoxepac		34552-84-6			
Isoxicam		395-28-8			
Isoxsuprine					

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isradipine	3,5-Pyridinedicarboxylic acid, 4-(4-benzofurazanyl)-1,4-dihydro-2,6-dimethyl-, methyl 1-methylethyl ester [CAS]	75695-93-1	GB 2037766	Antihypertensive, other	Hypertension, general
israpafant	6H-Thieno[3,2-f][1,2,4]triazolo[4,3-a][1,4]diazepine, 4-(2-chlorophenyl)-6,9-dimethyl-2-[2-[4-(2-methylpropyl)phenyl]ethyl]-[CAS]	117279-73-9	EP 268242	Antialsthma	Asthma
ISV-403			US 5447926	Formulation, mucosal, topical	Conjunctivitis
Itasetron		123258-84-4			
ITF-282	ITF 282 [CAS]	93615-44-2	GB 2115821	Antianaemic	Anaemia, general
itopride	Benzamide, N-[[4-[2-(dimethylamino)ethoxy]phenyl]methyl]-3,4-dimethoxy-, monohydrochloride [CAS]	122892-31-3	EP 306827	Gastroprokinetic	Gastritis
itraconazole	3H-1,2,4-Triazol-3-one, 4-[4-[4-[2-(2,4-dichlorophenyl)-2-(1H-1,2,4-triazol-1-yl)methyl]-1,3-dioxolan-4-yl]methoxy]phenyl]-1-piperazinyl]phenyl]-2,4-dihydro-2-(1-methylpropyl)- [CAS]	84625-61-6	EP 6711	Antifungal	Infection, fungal, general
litramin		13445-63-1			
litiglumide	1-Naphthalenepropanoic acid, β-[2-[[2-(8-azaspiro[4.5]dec-8-ylcarbonyl)-4,6-dimethylphenyl]amino]-2-oxoethyl]-, (SR)-[CAS]	201605-51-8	WO 9800404	Anxiolytic	Anxiety, general
litrelix	D-Alaninamide N-acetyl-3-(2-naphthalenyl)-D-alanyl-4-chloro-D-phenylalanyl-3-(3-pyridinyl)-D-alanyl-L-seryl-N6-(3-pyridinylcarbonyl)-L-lysyl-N6-(3-pyridinylcarbonyl)-D-lysyl-L-leucyl-N6-(1-methylethyl)-L-lysyl-L-prolyl- [CAS]	112568-12-4	WO 8901944	Fertility enhancer	Infertility, female
ivabradine	7,8-dimethoxy-3-(3-[[[(1S)(4,5-dimethoxybenzocyclobutan-1-yl)methyl]methylamino]propyl]-1,3,4,5-tetrahydro-2H-benzazepin-2-one			Antianginal	Angina, general



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ixabepilone	17-Oxa-4-azabicyclo(14.1.0)heptadecane-5,9-dione, 7,11-dihydroxy-8,10,12,16-pentamethyl-3-(1-methyl-2-(2-methyl-4-thiazolyl)ethenyl), (1R,3S,7S,10R,11S,12S,16R) [CAS]	219989-84-1		Anticancer, other	Cancer, breast
J-104132	5H-Cyclopenta[b]pyridine-6-carboxylic acid, 5-(1,3-benzodioxol-5-yl)-2-butyl-7-[2[(2S)-2-carboxypropyl]-4-methoxyphenyl]-6,7-dihydro-, (5S,6R,7R)- [CAS]	198279-45-7	WO 9737665	Antihypertensive, other	Heart failure
J-107088	5H-Indolo(2,3-a)pyrrolo(3,4-c)carbazole-5,7(6H)-dione, 12-β-D-glucopyranosyl-12,13-dihydro-2,10-dihydroxy-6-((2-hydroxy-1-(hydroxymethyl)ethyl)amino) [CAS]	174402-32-5		Anticancer, other	Cancer, bladder
J-113397	1-[(3R,4R)-1-Cyclooctylmethyl-3-hydroxymethyl-4-piperidyl]-3-ethyl-1,3-dihydro-2H-benzimidazole-2-one			Analgesic, other	Pain, general
Janex-1	Phenol, 4-[(6,7-dimethoxy-4-quinazolinyl)amino]-[CAS]	202475-60-3		Anticancer, other	Cancer, leukaemia, general
josamycin	[Leucomycin V, 3-acetate 4B-(3-methylbutanoate) [CAS]	16846-24-5	JP 41021759	Macrolide antibiotic	Infection, general
JTV-519	1,4-Benzothiazepine, 2,3,4,5-tetrahydro-7-methoxy-4-[1-oxo-3-[4-(phenylmethyl)-1-piperidinyl]propyl]- [CAS]	145903-06-6	WO 9212148	Cardiovascular	Infarction, myocardial
K-777			US 6287840	Protozoacide	Infection, trypanosomiasis, American
<b>Kainic Acid</b>		487-79-6			
Kalimate	Kalimate- [CAS]	92354-70-6		Urological	
<b>Kallidin</b>		342-10-9			
KB-130015	Acetic acid (2,6-diiodo-4-((2-methyl-3-benzofuranyl)methyl)phenoxy)- [CAS]	147030-48-6		Antiarrhythmic	Arrhythmia, general

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KCB-328	Methanesulfonamide, N-[3-amino-4-[2-[(3,4-dimethoxyphenyl)ethyl]methylamino]ethoxy]phenyl]-, monohydrochloride [CAS]	177596-55-3	WO 9604231	Antiarrhythmic	Arrhythmia, general
Kebuzone		853-34-9			
ketamine	2-(2-Chlorophenyl)-2-(methylamino)-cyclohexanone hydrochloride	6740-88-1		Formulation, transmucosal, nasal	Pain, post-operative
ketanserlin	2,4(1H,3H)-Quinazolinedione, 3-[2-(4-(4-fluorobenzoyl)-1-piperidinyl)ethyl]-[CAS]	74050-98-9 83846-83-7	EP 13612	Antihypertensive, other	Hypertension, general
ketazolam	4H-[1,3]Oxazino[3,2-d][1,4]benzodiazepine-4,7(6H)-dione, 11-chloro-8,12b-dihydro-2,8-dimethyl-12b-phenyl- [CAS]	27223-35-4	GB 1222294	Anxiolytic	
Kethoxal		27762-78-3			
Ketobemidone		469-79-4			
ketoconazole	Piperazine, 1-acetyl-4-[4-[2-(2,4-dichlorophenyl)-2-(1H-imidazol-1-ylmethyl)-1,3-dioxolan-4-yl]methoxy]phenyl]-, cis-[CAS]	65277-42-1	US 4335125	Antifungal	Infection, fungal, general
ketoprofen	mono(3-benzoyl)-Alpha-methylbenzeneacetate [CAS]	173011-11-5	EP 502502	Formulation, transdermal, systemic	Pain, general
ketorolac	1H-Pyrrolizine-1-carboxylic acid, 5-benzoyl-2,3-dihydro-, (+/-)- [CAS]	74103-06-3 74103-07-4	EP 53021	Analgesic, NSAID	
Ketorolac Tromethamine					
ketotifen	10-H-Benzo[4,5]cyclohepta[1,2-b]thiophen-10-one, 4,9-dihydro-4-(1-methyl-4-piperidinylidene)-, (E)-2-butenedioate (1:1)-[CAS]	34580-13-7 34580-14-8	GB 1355539	Antiasthma	Asthma
Khellin		82-02-0			
kinetin		9001-29-0		Dermatological	Photodamage

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KNI-272	4-Thiazolidinecarboxamide, N-(1,1-dimethylethyl)-3-[2-hydroxy-3-[[2-[[5-isoquinolinyl(oxy)acetyl]amino]-3-(methylthio)-1-oxopropyl]amino]-1-oxo-4-phenylbutyl]-, [4R-[3'[(2S*,3S*(R*)),4R*]]-[CAS]	147318-81-8	US 5644028	Antiviral, anti-HIV	Infection, HIV/AIDS
KP-103	(R,R)-2-(2,4-Difluorophenyl)-3-(4-methylenepiperidin-1-yl)-1-(1,2,4-triazol-1-yl)-2-butanol			Antifungal	Infection, general
KP-157			US 6110961	Antidepressant	Depression, general
KP-544			WO 9919305	Cognition enhancer	Unspecified
KRN-5500	L-glycero-β-L-manno-Heptopyranosylamine, 4-deoxy-4-[[[[(2E,4E)-1-oxo-2,4-tetradecadienyl]amino]acetyl]amino]-N-1H-purin-6-yl- [CAS]	151276-95-8	WO 9015811	Anticancer, antibiotic	Cancer, colorectal
KT-136	Alpha-D-Glucopyranoside, β-D-fructofuranosyl, mixt. with 1-ethenyl-2-pyrrolidinone homopolymer compd. with iodine [CAS]	121602-88-8		Formulation, dermal, topical	Ulcer, decubitus
KUL-7211	(-)-2-[(2S)-1,2,3,4-tetrahydro-2-[[[(2R)-2-hydroxy-2-(4-hydroxyphenyl)ethyl]amino]naphthalen-7-yloxy]-N,N-dimethylacetamide hydrochloride monohydrate			Urological	Urinary calculus
KW-2170	6H-Pyrazolo[4,5,1-de]acridin-6-one,5-[[3-aminopropyl]amino]-7,10-dihydroxy-2-[[[(2-hydroxyethyl)amino]methyl]-, dihydrochloride [CAS]	207862-44-0		Anticancer, alkylating	Cancer, lung, non-small cell
KW-6002	1H-Purine-2,6-dione, 8-(2-(3,4-dimethoxyphenyl)ethenyl)-1,3-diethyl-3,7-dihydro-7-methyl- (E)- [CAS]	155270-99-8		Antiparkinsonian	Parkinson's disease
KW-7158	3,3,3-Trifluoro-2-hydroxy-2-methyl-N-(10-oxo-4,10-dihydrothieno[3,2-C][1]benzothiepin-9-yl)propanamide 5,5 dioxide			Urological	Incontinence

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L-365260	Urea, N-(2,3-dihydro-1-methyl-2-oxo-5-phenyl-1H-1,4-benzodiazepin-3-yl)-N'-(3-methylphenyl)-, (R)- [CAS]	118101-09-0	EP 284256	Anticancer, other	Cancer, general
L-5-hydroxytryptophan	L-Tryptophan, 5-hydroxy- [CAS]	4350-09-8		Metabolic and enzyme disorders	Unspecified
L-745337	Methanesulfonamide, N-[6-[(2,4-difluorophenyl)thio]-2,3-dihydro-1-oxo-1H-inden-5-yl]- [CAS]	158205-05-1	WO 9413635	Analgesic, NSAID	Pain, general
L-758298	Phosphonic acid, [3-[[[(2R,3S)-2-[(1R)-1-[3,5-bis(trifluoromethyl)phenyl]ethoxy]-3-(4-fluorophenyl)-4-morpholinyl]methyl]-2,5-dihydro-5-oxo-1H-1,2,4-triazol-1-yl]- [CAS]	172673-20-0	WO 9523798	Antiemetic	Chemotherapy-induced nausea and vomiting
L-826141			WO 9722585	Antiasthma	Unspecified
labetalol	5-[1-hydroxy-2-[(1-methyl-3-phenylpropyl)amino]ethyl]salicylamide HCl	32780-64-6 36894-69-6	US 4012444	Antihypertensive, adrenergic	
lacidipine	3,5-Pyridinedicarboxylic acid, 4-[2-[3-(1,1-dimethylethoxy)-3-oxo-1-propenyl]phenyl]-1,4-dihydro-2,6-dimethyl-, diethyl ester, (E) [CAS]	103890-78-4	GB 2164336	Antihypertensive, other	Hypertension, general
Lactic Acid	D-Glucitol, 4-O-β-D-galactopyranosyl- [CAS]	585-86-4		Hepatoprotective	Infection, neurological
Lactulose	Acetamide, 2-[(2-furanylmethyl)sulfinyl]-N-[4-[[4-(1-piperidinylmethyl)-2-pyridinyloxy]-2-butenyl]-, (Z)- [CAS]	4618-18-2 118288-08-7 169899-19-8	EP 282077	Antilulcer	Ulcer, gastric
lamivudine	2(1H)-Pyrimidinone, 4-amino-1-[2-(hydroxymethyl)-1,3-oxathiolan-5-yl]-, (2R-cis)- [CAS]	144412-49-7			
lamotrigine	1,2,4-Triazine-3,5-diamine, 6-(2,3-dichlorophenyl)- [CAS]	134678-17-4 84057-84-1	EP 513917 EP 21121	Antiviral, anti-HIV Antiepileptic	Infection, HIV/AIDS Epilepsy, partial (focal, local)

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landiolol	Benzenepropanoic acid, 4-[2-hydroxy-3-[[2-[[4-morpholinyl(carbonyl)amino]ethyl]amino]propoxy]-, (2,2-dimethyl-1,3-dioxolan-4-yl)methyl ester, [S-(R*, R*)]- HCL	133242-30-5	EP 397031	Antiarrhythmic	Tachycardia, general
lanicemine	(S)-Alpha-phenyl-2-pyridine ethanamine dihydrochloride	153322-05-5		Neurological	Unspecified
laniquidar	Methyl 6,11-dihydro-11-[1-[2-[4-(2-quinolylmethoxy)phenyl]ethyl]-4-piperidinylidene]-5H-imidazo[2,1-b][3]benzazepine-3-carboxylate	197509-46-9	WO 9734897	Radio/chemosensitizer	Cancer, general
lanoconazole	1H-Imidazole-1-acetonitrile, Alpha-[4-(2-chlorophenyl)-1,3-dithiolan-2-ylidene]-, (E)- (±)- [CAS]	101530-10-3	US 4738976	Antifungal	Infection, fungal, general
Lanoteplase		171870-23-8			
Lanreotide		108736-35-2			
lansoprazole	1H-Benzimidazole, 2-[[[3-methyl-4-(2,2,2-trifluoroethoxy)-2-pyridyl]methyl]sulfinyl]- [CAS]	103577-45-3	EP 174726	Antilulcer	Ulcer, duodenal
lanthanum carbonate	Carbonic acid, lanthanum(3+) salt (3:2)[CAS]	587-26-8	US 5968976	Urological	Hyperphosphataemia
lapatinib	4-Quinazolinamine, N-[3-chloro-4-[(3-fluorobenzyl)methoxy phenyl]-6-[5-[[[2-(methylsulfonyl)ethyl]amino]methyl]furan-2-yl]]	388082-78-8		Anticancer, other	Cancer, breast
laquinimod		248281-84-7		Multiple sclerosis treatment	Multiple sclerosis, general
lasofoxifene	2-Naphthalenol, 5,6,7,8-tetrahydro-6-phenyl-5-(4-(2-(1-pyrrolidinyl)ethoxy)phenyl)-(5R-cis)-, (S-(R*, R*)))-2,3-dihydroxybutanedioate [CAS]	190791-29-8	WO 9716434	Menopausal disorders	Hormone replacement therapy





Table IV

API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
<i>Lepirudin</i>					
	3,5-Pyridinedicarboxylic acid, 1,4-dihydro-2,6-dimethyl-4-(3-nitrophenyl)-, 2-[(3,3-diphenylpropyl)methylamino]-1,1-dimethylethyl methyl ester-, hydrochloride [CAS]	100427-26-7 132866-11-6	US 4705797	Antihypertensive, other	Hypertension, general
lericanidipine					
	1H-Benzimidazole, 1-(phenylmethyl)-2-(1-piperazinyl)- [CAS]	143257-98-1	US 5256665	Antiemetic	Nausea and vomiting, general
<b>Lesopitron</b>		132449-46-8			
	Benzoic acid, 4-[(3-{1,6-dihydro-6-oxo-9H-purin-9-yl}-1-oxopropyl)amino]-, monopotassium salt [CAS]	138117-50-7	US 6338963	Antiparkinsonian	Parkinson's disease
leteprinim					
	4-[Thiazolidinecarboxylic acid, 2-[2-[(2-ethoxy-2-oxoethyl)thio]ethyl]- [CAS]	53943-88-7	US 4032534	COPD treatment	Bronchitis, chronic
letosteine					
	Benzonitrile, 4,4'-(1H-1,2,4-triazol-1-ylmethylene)bis- [CAS]	112809-51-5	EP 236940	Anticancer, hormonal	Cancer, breast
letrozole		480-17-1			
<b>Leucocyanidin</b>		53714-56-0			
<b>Leuprolide</b>					
	Luteinizing hormone-releasing factor (pig), 6-D-leucine-9-(N-ethyl-L-prolinamide)-10-deglycinamide-, monoacetate (salt) [CAS]	53714-56-0 74381-53-6		Formulation, implant	Cancer, prostate
leuprolide acetate					
	Luteinizing hormone-releasing factor (pig), 6-D-leucine-9-(N-ethyl-L-prolinamide)-10-deglycinamide- [CAS]	53714-56-0		Formulation, implant	Cancer, prostate
leuprorelin					
<b>Levallorphan</b>		152-02-3			
	Imidazo[2,1-b]thiazole, 2,3,5,6-tetrahydro-6-phenyl-, (S)- [CAS]	14769-73-4 16595-80-5	US 4584305	Anthelmintic	Infection, helminth, general
levamisole					
<b>Levcromakalim</b>		94535-50-9			
	1-Pyrrolidineacetamide, Alpha-ethyl-2-oxo-, (S)- [CAS]	102767-28-2	EP 162036	Antiepileptic	Epilepsy, general
levetiracetam					
	2-Propanol, 1-(4-(2-(cyclopropylmethoxy)ethyl)phenoxy)-3-((1-methylethyl)amino) hydrochloride [CAS]	116209-55-3		Formulation, mucosal, topical	Glaucoma
levobetaxolol					

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levobunolol	1-(2H)-Naphthalenone, 5-[3-[(1,1-dimethylethyl)amino]-2-hydroxypropoxy]-3,4-dihydro-, (S)- [CAS]	27912-14-7 47141-42-4	US 3641152	Formulation, mucosal, topical	Glaucoma
levobupivacaine	2-Piperidinecarboxamide, 1-butyl-N-(2,6-dimethylphenyl)-, (S)- [CAS]	27262-47-1	WO 9510276	Anaesthetic, injectable	Anaesthesia
levocabastine	4-Piperidinecarboxylic acid, 1-[4-cyano-4-(4-fluorophenyl)cyclohexyl]-3-methyl-4-phenyl-, [3S-(1(cis),3A(pha,4S))]- [CAS]	79449-98-2 79516-68-0 79547-78-7	US 4369184	Antiallergic, non-asthma	Rhinitis, allergic, general
levocetirizine	Acetic acid, (2-(4-((4-chlorophenyl)phenylmethyl)-1-piperazinyl)ethoxy)-, (R)- [CAS]	130018-77-8	WO 9406429	Antiallergic, non-asthma	Allergy, general
<b>Levodopa</b>		59-92-7			
levodropropizine	1,2-Propanediol, 3-(4-phenyl-1-piperazinyl)-, (S)- [CAS]	99291-25-5	EP 147847	Antitussive	Cough
levofloxacin	7H-Pyrido[1,2,3-de]-1,4-benzoxazine-6-carboxylic acid, 9-fluoro-2,3-dihydro-3-methyl-10-(4-methyl-1-piperazinyl)-7-oxo-, (S)- [CAS]	100986-85-4 138199-71-0	EP 206283	Quinolone antibacterial	Infection, respiratory tract, lower
<b>Levomethadyl Acetate</b>		1477-40-3			
levomoprolol	2-Propanol, 1-(2-methoxyphenoxy)-3-[(1-methylethyl)amino]-, (S)- [CAS]	27058-84-0 5741-22-0 77164-20-6	EP 15418	Antihypertensive, adrenergic	
levonorgestrel	18,19-Dinorpregn-4-en-20-yn-3-one, 13-ethyl-17-hydroxy-, (17Alpha)- [CAS]	797-63-7		Formulation, implant	Contraceptive, female
<b>Levophacetoperane</b>		24558-01-8			
<b>Levopropoxyphene</b>		2338-37-6			
<b>Levorphanol</b>		77-07-6			
levosimendan	Propanedinitrile, [[4-(1,4,5,6-tetrahydro-4-methyl-6-oxo-3-pyridazinyl)phenyl]hydrazono]-, (R)- [CAS]	131741-08-7 141505-33-1	EP 383449	Cardiostimulant	Heart failure
levosulpiride	Benzamide, 5-(aminosulfonyl)-N-[(1-ethyl-2-pyrrolidinyl)methyl]-2-methoxy-, (S)- [CAS]	23672-07-3	GB 2014990	Antiemetic	Dyspepsia

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Levothyroxine	1-β-L-ribofuranosyl-1,2,4-triazole-3-carboxamide				
levovirin	L-Leucine, N-methyl-N-[[4-[(2-methyl-1H-imidazo[4,5-c]pyridin-1-yl)methyl]phenyl]sulfonyl]-, ethyl ester- [CAS]	139133-26-9	WO 9203423	Antiviral, other	Infection, hepatitis-C virus
lexipafant			WO 9624579	Immunosuppressant	Dementia, AIDS-related
LF-15-0195					Lupus erythematosus, general
LF-16-0687	2-Pyrrolidinecarboxamide, N-[3-[[4-(aminoiminomethyl)benzoyl]amino]propyl]-1-[2,4-dichloro-3-[[[(2,4-dimethyl-8-quinolinyl)oxy]methyl]phenyl]sulfonyl]]-, (2S)- [CAS]	209733-45-9	FR 2756562	Neuroprotective	Head trauma
LGD-1550	2,4,6-Octatrienoic acid, 7-(3,5-bis(1,1-dimethylethyl)phenyl)-3-methyl-(2E,4E,6E)- [CAS]	178600-20-9		Anticancer, other	Cancer, cervical
LH		9002-67-9			
LH-RH		9034-40-6			
liarazole	1H-Benzimidazole, 5-[(3-chlorophenyl)-1H-imidazol-1-ylmethyl]- [CAS]	115575-11-6		Formulation, other	Psoriasis
licofelone	1H-Pyrrolizine-5-acetic acid, 6-(4-chlorophenyl)-2,3-dihydro-2,2-dimethyl-7-phenyl- [CAS]	156897-06-2		Antiarthritic, other	Arthritis, osteo
Licostinel	Phosphonic acid, [1-amino-3-(dimethylamino)propylidene]bis- [CAS]	153504-81-5			
lidadronate		63132-38-7	WO 9702827	Urological	Unspecified
Lidamidine	Acetamide, 2-(diethylamino)-N-(2,6-dimethylphenyl)- [CAS]	66871-56-5			
lidocaine		137-58-6		Formulation, transdermal, patch	Pain, post-herpetic
Lidofenin		59160-29-1			
Lidoflazine		3416-26-0			
limaprost	Prosta-2,13-dien-1-olic acid, 11,15-dihydroxy-17,20-dimethyl-9-oxo-, (2E,11Apha,13E,15S,17S)-, [CAS]	74397-12-9	GB 2041368	Prostaglandin	Buerger's syndrome

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Lincomycin		154-21-2			
Lindane		58-89-9			
linezolid	Acetamide, N-((3-(3-fluoro-4-(4-morpholinyl)phenyl)-2-oxo-5-oxazolidinyl)methyl)-, (S)- [CAS]	165800-03-3	WO 9507271	Antibiotic, other	Infection, dermatological
Linoleic Acid		60-33-3			
Linolenic Acid		463-40-1			
Liothyronine		6893023			
Lipase		9001-62-1			
Lipo-dexamethasone palmitate	Pregna-1,4-diene-3,20-dione, 9-fluoro-11,17-dihydroxy-16-methyl-21-[(1-oxohexadecyl)oxy]-, (11 $\beta$ ,16 $\alpha$ )- [CAS]	14899-36-6		Formulation, optimized, microemulsion	Arthritis, rheumatoid
lipo-flurbiprofen	[1,1'-Biphenyl]-4-acetic acid, 2-fluoro- $\alpha$ -methyl-, 1-(acetyloxy)ethyl ester [CAS]	91503-79-6	JP 60208910	Formulation, optimized, microemulsion	Pain, cancer
Lipogel H/A			EP 525655	Formulation, optimized, liposomes	Unspecified
LiquiVent	perfluorooctylbromide	423-55-2	US 5437272	Lung Surfactant	Respiratory distress syndrome, adult
liranaftate	Carbamothioic acid, (6-methoxy-2-pyridinyl)methyl-, O-(5,6,7,8-tetrahydro-2-naphthalenyl) ester [CAS]	88678-31-3	GB 2124617	Antifungal	Infection, dermatological
lisinopril	L-Proline, 1-[N2-(1-carboxy-3-phenylpropyl)-L-lysyl]-, (S)- [CAS]	76547-98-3 83915-83-7	EP 12401	Antihypertensive, renin system	Hypertension, general
Lisofylline		100324-81-0			
lisuride	Urea, N'-[(8 $\alpha$ )-9,10-didehydro-6-methylergolin-8-yl]-N,N-diethyl-, [CAS]	19875-60-6 305-13-5 18016-80-3		Antiprolactin	Acromegaly
Lithium Citrate		919-16-4			
lithium	Carbonic acid, dilithium salt [CAS]	554-13-2		Formulation, modified-release, <=24hr	Depression, bipolar
lixivaptan	Benzamide, N-[3-chloro-4-(5H-pyrrolo[2,1-c][1,4]benzodiazepin-10(11H)-ylcarbonyl)phenyl]-5-fluoro-2-methyl- [CAS]	168079-32-1	US 5736540	Cardiovascular	Heart failure
LJP-1082			US 6207160	Immunosuppressant	Thrombosis, venous

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LLUAlpha	S-2,7,8-Trimethyl-6-( $\beta$ -carboxyethyl)-6-hydroxychroman			Antihypertensive, other	Hypertension, general
LMP-160			US 5643893	Antiasthma	Asthma
LMP-420			US 5643893	Antiarthritic, other	Arthritis, rheumatoid
lobaplatin	Platinum, (1,2-cyclobutanedimethanamine-N,N') [2-hydroxypropanoato(2-)-O1,O2]-[SP-4-3(S),(trans)]- [CAS]	135558-11-1	DE 4115559	Anticancer, alkylating	Cancer, lung, small cell
Lobeline		90-69-7			
Lobenzarit		63329-53-3			
Iodoxamide	2,2'-((2-chloro-5-cyano-1,3-phenylene)diimino)bis(2-oxoacetate):2-amino-2-(hydroxymethyl)-1,3-propanediol (1:2)	63610-09-3 53882-12-5	US 4439445	Antiasthma	Asthma
Lofentanil		61380-40-3			
Iofepamine	Ethanone, 1-(4-chlorophenyl)-2-[[3-(10,11-dihydro-5H-dibenz[b,f]azepin-5-yl)propyl]methylamino]- [CAS]	23047-25-8 26786-32-3	GB 1177525	Antidepressant	
Iofexidine	1H-Imidazole, 2-[1-(2,6-dichlorophenoxy)ethyl]-4,5-dihydro- [CAS]	31036-80-3	GB 1181356	Antihypertensive, adrenergic	Hypertension, general
Loflucarban		790-69-2			
Iomefloxacin	3-Quinolincarboxylic acid, 1-ethyl-6,8-difluoro-1,4-dihydro-7-(3-methyl-1-piperazinyl)-4-oxo- [CAS]	98079-51-7 98079-52-8	EP 140116	Quinolone antibacterial	Infection, respiratory tract, lower
Iomerizine	Piperazine, 1-[bis(4-fluorophenyl)methyl]-4-[[2,3,4-trimethoxyphenyl)methyl]-. [CAS]	101477-54-7 101477-55-8	EP 159566	Antimigraine	Migraine
Iomifylline	7-(5-oxohexyl)theophylline	10226-54-7	DE 2207860	Neurological	
Iomustine	Urea, N-(2-chloroethyl)-N'-cyclohexyl-N-nitroso- [CAS]	13010-47-4	JP 48075526	Anticancer, alkylating	
Ionaftarnib	1-Piperidinecarboxamide, 4-[2-[4-[(11R)-3,10-dibromo-8-chloro-6,11-dihydro-5H-benzo[5,6]cyclohepta[1,2-b]pyridin-11-yl]-1-piperidinyl]-2-oxoethyl]- [CAS]	193275-84-2	US 5874442	Anticancer, other	Cancer, lung, non-small cell



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Lonapalene		91431-42-4			
Lonazolac		53808-88-1			
lonidamine	1H-Indazole-3-carboxylic acid, 1-[(2,4-dichlorophenyl)methyl]- [CAS]	50264-69-2	DE 2310031	Radio/chemosensitizer	Cancer, breast
loperamide	4-(p-chlorophenyl)-4-hydroxy-N,N-dimethyl-Alpha,Alpha-diphenyl-1-piperidine butyramide HCl	34552-83-5 53179-11-6	US 3714159	Antidiarrhoeal	Diarrhoea, general
loperamide oxide	1-Piperidinebutanamide, 4-(4-chlorophenyl)-4-hydroxy-N,N-dimethyl-Alpha,Alpha-diphenyl-, 1-oxide, trans- [CAS]	106900-12-3	EP 219898	Antidiarrhoeal	Diarrhoea, general
loprazolam	1H-Imidazo[1,2-a][1,4]benzodiazepin-1-one, 6-(2-chlorophenyl)-2,4-dihydro-2-[(4-methyl-1-piperazinyl)methylene]-8-nitro- [CAS]	61197-73-7 61197-93-1 70111-54-5	GB 1496426	Hypnotic/Sedative	
Loprinone		106730-54-5			
loracarbef	1-Azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[(aminophenylacetyl)amino]-3-chloro-8-oxo-, [6R-[6Alpha,7B(R*)]]- [CAS]	76470-66-1 121961-22-6	EP 14475	Cephalosporin, oral	Infection, respiratory tract, lower
Lorajmine		47562-08-3			
loratadine	1-Piperidinecarboxylic acid, 4-(8-chloro-5,6-dihydro-11H-benzo[5,6]cyclohepta[1,2-b]pyridin-11-ylidene)-, ethyl ester- [CAS]	79794-75-5	EP 42544	Antiallergic, non-asthma	Rhinitis, allergic, general
lorazepam	2H-1,4-Benzodiazepin-2-one, 7-chloro-5-(2-chlorophenyl)-1,3-dihydro-3-hydroxy-	846-49-1		Formulation, oral, orally-disintegrating	Epilepsy, general
lorcainide	Benzeneacetamide, N-(4-chlorophenyl)-N-[1-(1-methylethyl)-4-piperidinyl]-[CAS]	58934-46-6 59729-31-6	DE 2642856	Antiarrhythmic	
lormetazepam	2H-1,4-Benzodiazepin-2-one, 7-chloro-5-(2-chlorophenyl)-1,3-dihydro-3-hydroxy-1-methyl- [CAS]	848-75-9	US 3296249	Hypnotic/Sedative	Insomnia



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lomoxicam	2H-Thieno[2,3-e]-1,2-thiazine-3-carboxamide, 6-chloro-4-hydroxy-2-methyl-N-2-pyridinyl-, 1,1-dioxide- [CAS]	70374-39-9	EP 313935	Analgesic, NSAID	Pain, post-operative
losartan	1H-Imidazole-5-methanol, 2-butyl-4-chloro-1-[[2'-(1H-tetrazol-5-yl)]1,1'-biphenyl]-4-yl)methyl]-, [CAS]	124750-99-8 114798-26-4	EP 253310	Antihypertensive, renin system	Hypertension, general
loteprednol	Androsta-1,4-diene-17-carboxylic acid, 17-[(ethoxycarbonyl)oxy]-11-hydroxy-3-oxo-, chloromethyl ester, (11β, 17Alpha)- [CAS]	82034-46-6	GB 2079755	Anti-inflammatory, topical	Uveitis
Lotrafiban		171049-14-2			
Lovastatin		75330-75-5			
Loxapine		10/02/1977			
loxiglumide	Pentanoic acid, 4-[(3,4-dichlorobenzoyl)amino]-5-[(3-methoxypropyl)pentylamino]-5-oxo-, (±)- [CAS]	107097-80-3	WO 8703869	GI inflammatory/bowel disorders	Pancreatitis
loxoprofen	Benzeneacetic acid, Alpha-methyl-4-[(2-oxocyclopentyl)methyl]- [CAS]	68767-14-6 80382-23-6 87828-36-2	EP 55588	Antiarthritic, other	Arthritis, rheumatoid
Lu-35-138	1-[3]2-[5-chloro-1-(4-fluorophenyl)-3-(1H-indolyl)ethyl]methylamino]propyl]-2-imidazolidinone hydrochloride		WO 9516684	Neuroleptic	Psychosis, general
Lubeluzole	(-)-7-[(2R,4aR,5R,7aR)-2-(1,1-difluoropentyl)-2-hydroxy-6-oxooctahydrocyclopenta[b]pyran-5-yl]heptanoic acid	144665-07-6			
lubiprostone		136790-76-6		Laxative	Constipation
lucanthone	Thioxanthene-9-one, 1-((2-(diethylamino)ethyl)amino-4-methyl- [CAS]	479-50-5		Radio/chemosensitizer	Cancer, brain
Lucanthone		548-57-2			
Lumefantrine		82186-77-4			
lumiracoxib	Benzenecacetic acid, 2-((2-chloro-6-fluorophenyl)amino)-5-methyl- [CAS]	220991-20-8		Analgesic, NSAID	Pain, general

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Lurtotecan	11H-1,4-Dioxino[2,3-g]pyrano[3',4':6,7]indolizino[1,2-b]quinoline-9,12[8H,14H]-dione, 8-ethyl-2,3-dihydro-8-hydroxy-15-[[4-methyl-1-piperazinyl]methyl]-, [CAS]	155773-58-3		Formulation, optimized, liposomes	Cancer, ovarian
	Lutetium, bis(acetato-O)[9,10-diethyl-20,21-bis-[2-[2-(2-methoxyethoxy)ethoxy]ethoxy]-4,15-dimethyl-8,11-imino-3,6:16,13-dinitrilo-1,18-benzodiazacycloicosine-5,14-dipropanolato-N1,N18,N23,N24,N25]-, (PB 7-11-233'24)- [CAS]	156436-90-7	WO 9906411	Radio/chemosensitizer	Atherosclerosis
LV-216	Zinc[2-(2,6-dichloroanilino)phenyl]acetate			Anti-inflammatory	Arthritis, rheumatoid
LX-104	Hexadecanamide, N-[4-[[2-[2-[2-[O-(N-acetyl- $\alpha$ -neuraminosyl)-(2-3)-O- $\beta$ -D-galactopyranosyl-(1-4)-O-[6-deoxy- $\alpha$ -L-galactopyranosyl-(1-3)]- $\beta$ -D-glucopyranosyl]oxy]ethoxy]ethoxy]ethoxy]methyl]phenyl]-2-tetradecyl- [CAS]	158792-45-1		Cognition enhancer	Dementia, senile, general
LY-156735	$\beta$ -methyl-6-chloromelatonin		EP 655243	Hypnotic/Sedative	Sleep disorder, general
LY-293111	Benzoic acid, 2-[3-[3-[(5-ethyl-4'-fluoro-2-hydroxy[1,1'-biphenyl]-4-yl)oxy]propoxy]-2-propyl]phenoxy]- [CAS]	161172-51-6		Anticancer, other	Cancer, melanoma
LY-293558	3-Isoquinolinecarboxylic acid, decahydro-6-[2-(1H-tetrazol-5-yl)ethyl]-, [3S-(3 $\alpha$ Pha.,4 $\alpha$ Alpha,6 $\beta$ ,8 $\alpha$ Alpha.)]- [CAS]	154652-83-2		Analgesic, other	Pain, neuropathic
LY-355703	1,4-Dioxo-8,11-diazacyclohexadec-13-ene-2,5,9,12-tetrone, 10-[[3-chloro-4-methoxyphenyl)methyl]-6,6-dimethyl-3-(2-methylpropyl)-16-[[1S)-1-[(2S,3R)-3-phenyloxiranyl]ethyl]-, (3S,10R,13E,16S)- [CAS]	18256-67-7			
Lyapolate		25053-27-4	WO 9707798	Anticancer, other	Cancer, lung, non-small cell
Lymecycline		992-21-2			

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Lynestrenol		52-76-6			
Lypressin		50-57-7			
Lysine Acetylsalicylate		62952-06-1			
lysine salicylate	L-Lysine, 2-hydroxybenzoate [CAS]	59535-08-9	WO 9624331	Analgesic, NSAID	
lysophospholipids			WO 9843093	Diagnostic	Diagnosis, cancer
M-40403	Dichloro[(4aR,13aR,17aR,21aR)-1,2,3,4,4a,5,6,12,13,13a,14,15,16,17,17a,18,19,20,21,21a-eicosahydro-1,7-nitrilo-7H-dibenzo[b,h] [1,4,7,10]tetraazacycloheptadecine-kappaN5,kappaN13,kappaN18,kappaN21,kappaN22]manganese		US 6180620	Anticancer, other	Unspecified
mabuprofen	Benzeneacetamide, N-(2-hydroxyethyl)-Alpha-methyl-4-(2-methylpropyl)-, (+/-)-[CAS]	82821-47-4	DE 3121595	Anti-inflammatory	
Mabuterol		56341-08-3			
Macrophage Colony-Stimulating Factor		81627-83-0			
MADU		840-50-6			
mafenide	Benzenesulfonamide, 4-(aminomethyl)-monoacetate [CAS]	13009-99-9 138-39-6		Vulnerary	Burns
mafosfamide	Ethanesulfonic acid, 2-[[2-bis(2-chloroethyl)amino]tetrahydro-2H-1,3,2-oxazaphosphorin-4-yl]thio]-, P-oxide, cis-(±)- [CAS]	88859-04-5 98845-64-8	EP 393575	Anticancer, alkylating	Cancer, renal
magaldrate	Aluminum magnesium hydroxide sulfate (Al5Mg10(OH)31(SO4)2), hydrate [CAS]	74978-16-8	US 2923660	Antacid/Antiflatulent	
Magenta I		632-99-5			
Magnesium Acetylsalicylate		132-49-0			
Magnesium Carbonate Hydroxide		39409-82-0			
magnesium chloride	Magnesium chloride (MgCl2) [CAS]	7786-30-3		Formulation, oral, enteric-coated	Nutrition

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<b>Magnesium Citrate</b>	D-Gluconic acid, magnesium salt (2:1) [CAS]	3344-18-1			
magnesium gluconate		3632-91-5		Formulation, other	Hypertension, general
<b>Magnesium Lactate</b>		18917-93-6			
<b>Magnesium Salicylate</b>		18917-89-0			
<b>Malathion</b>		121-75-5			
<b>Malotilate</b>		59937-28-9			
<b>Mandelic Acid</b>		90-64-2			
<b>Mandelic Acid Isoamyl Ester</b>		5421045			
<b>Mangafodipir</b>		118248-94-5 (free acid); 155319-91-8 (hexahydrogen )			
manidipine	3,5-Pyridinedicarboxylic acid, 1,4-dihydro-2,6-dimethyl-4-(3-nitrophenyl)-, 2-[4-(diphenylmethyl)-1-piperazinyl]ethyl methyl ester [CAS]	89226-50-6 89226-75-5	EP 94159	Antihypertensive, other	Hypertension, general
<b>Mannomustine</b>	mannose-6-phosphate	551-74-6			
mannose-6-phosphate				Vulnerary	Wound healing
<b>Maprotiline</b>		10262-69-8			
maribavir	1H-Benzimidazol-2-amine, 5,6-dichloro-N-(1-methylethyl)-1-β-L-ribofuranosyl- [CAS]	176161-24-3		Antiviral, other	Infection, cytomegalovirus
marimastat	N-[2,2-Dimethyl-1(S)-(N-methylcarbamoyl)propyl]-N,3(S)-dihydroxy-2(R)-isobutylsuccinamide	154039-60-8	WO 9402447	Anticancer, other	Cancer, pancreatic
maxacalcitol	1,3-Cyclohexanediol, 4-methylene-5-(2-(octahydro-1-(1-(3-hydroxy-3-methylbutoxy)ethyl)-7a-methyl-4H-inden-4-ylidene)ethylidene)-, (1S-(1Alpha(R*),3aβ,4E(1S*,3R*,5Z),7aAlpha))- [CAS]	103909-75-7	US 4891364	Hormone	Hyperparathyroidism

Table IV

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mazindol	3H-Imidazo[2,1-a]isoindol-5-ol, 5-(4-chlorophenyl)-2,5-dihydro- [CAS]	22232-71-9	US 3763178	Anorectic/Antiobesity	Obesity
<b>Mazipredone</b>		<b>13085-08-0</b>			
MC-5723			US 6043259	Cardiovascular	Unspecified
MCC-478	(2-amino-6-(4-methoxyphenylthio)-9-[2-(phosphonomethoxy)ethyl]purine bis(2,2,2-trifluoroethyl) ester)			Antiviral, other	Infection, hepatitis-B virus
MCI-154	3(2H)-Pyridazinone, 4,5-dihydro-6-[4-(4-pyridinylamino)phenyl]-, monohydrochloride [CAS]	98326-32-0 98326-33-1	EP 145019	Cardio stimulant	Heart failure
<b>m-Cresyl Acetate</b>		<b>122-46-3</b>			
MDAM	Gamma-Methylene-10-deazaaminopterin			Anticancer, antimetabolite	Cancer, general
MDI-101			US 4885311	Anti acne	Acne
MDI-403		403849-94-5	US 4677120	Anti acne	Acne
MDL-100907	4-Piperidinemethanol, Alpha-(2,3-dimethoxyphenyl)-1-(2-(4-fluorophenyl)ethyl)-, (R)- [CAS]	139290-65-6		Hypnotic/Sedative	Sleep disorder, general
mebendazole	methyl-5-benzoylbenzimidazole-2-carbamate	31431-39-7	GB 1307306	Anthelmintic	
mebeverine	Benzoic acid, 3,4-dimethoxy-, 4-[ethyl[2-(4-methoxyphenyl)-1-methylethyl]amino]butyl ester [CAS]	3625-06-7		Antispasmodic	Irritable bowel syndrome
<b>Mebhydroline</b>		<b>524-81-2</b>			
<b>Mebrofenin</b>		<b>78266-06-5</b>			
<b>Mebutamate</b>		<b>64-55-1</b>			
mecamylamine	Bicyclo(2.2.1)heptan-2-amine, N,2,3,3-tetramethyl- [CAS]	60-40-2		Neurological	Unspecified
<b>Mechlorethamine</b>		<b>51-75-2</b>			
<b>Mechlorethamine Oxide</b>		<b>302-70-5</b>			

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meicillinam	4-Thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid, 6-[[[(hexahydro-1H-azepin-1-yl)methylene]amino]-3,3-dimethyl-7-oxo-, [2S-(2Alpha,5Alpha,6Beta.)]- [CAS]	32887-01-7 32887-03-9	GB 1293590	Penicillin, injectable	Infection, general
<b>Meclizine</b>		569-65-3			
<b>Meclocycline</b>		2013-58-3			
meclofenamate	Benzoic acid, 2-[(2,6-dichloro-3-methylphenyl)amino]-, monosodium salt [CAS]	6385-02-0 644-62-2		Antiarthritic, other	Arthritis, osteo
<b>Meclofenamic Acid</b>		644-62-2			
<b>Meclofenoxate</b>		51-68-3			
<b>Mecloqualone</b>		340-57-8			
<b>Mecysteine</b>		18598-63-5			
<b>Medazepam</b>		12/06/2898			
medifoxamine	Ethanamine, N,N-dimethyl-2,2-diphenoxy- [CAS]	32359-34-5	FR M5498	Antidepressant	
<b>Medrogestone</b>		977-79-7			
<b>Medronic Acid</b>		1984-15-2			
medroxyprogesterone	Pregn-4-ene-3,20-dione, 17-(acetyloxy)-6-methyl-, (6Alpha)	71-58-9 520-85-4		Formulation, fixed-dose combinations	Contraceptive, female
<b>Medrysone</b>		2668-66-8			
<b>Mefenamic Acid</b>		61-68-7			
<b>Mefenorex</b>		17243-57-1			
<b>Mefexamide</b>		1227-61-8			
mefloquine	4-Quinolinemethanol, Alpha-2-piperidinyl-2,8-bis(trifluoromethyl)-, (R*,S*)-(±)-[CAS]	51773-92-3 53230-10-7 69191-18-0	GB 1594282	Antimalarial	
<b>Mefruside</b>		7195-27-9			
<b>Megestrol</b>		595-33-5			
<b>Meglumine</b>		22154-43-4 131-49-7			
meglutol	2-hydroxy-2-methyl-1,3-propandicarboxylic acid	503-49-1	US 3629449	Hypolipaeic/Antiatherosclerosis	Hyperlipidaemia, general



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melagatran	Glycine, N-[(1R)-2-[(2S)-2-[[[4-(aminoiminomethyl)phenyl]methyl]amino]carbonyl]-1-azetidinyl]-1-cyclohexyl-2-oxoethyl]- [CAS]	159776-70-2	WO 9616671	Antithrombotic	Thrombosis, general
melanocortin-4 agonist	N-[(3R)-1,2,3,4-Tetrahydroisoquinolinium-3-ylcarbonyl]-(1R)-1-(4-chlorobenzyl)-2-[4-cyclohexyl-4-(1H-1,2,4-triazol-1-yl)methyl]piperidin-1-yl]-2-oxoethylamine(1)			Anorectic/Antiobesity	Obesity
Melarsoprol		494-79-1			
Melengestrol		5633-18-1			
melevodopa	Alanine, 3-(3,4-dihydroxyphenyl)-methyl ester [CAS]	7101-51-1	EP 252290	Antiparkinsonian	Parkinson's disease
Melinamide		14417-88-0			
Melitracen		5118-29-6			
meloxicam	2H-1,2-Benzothiazine-3-carboxamide, 4-hydroxy-2-methyl-N-(5-methyl-2-thiazolyl)-, 1,1-dioxide- [CAS]	71125-38-7	US 4233299	Antiarthritic, other	Arthritis, rheumatoid
melperone	1-Butanone, 1-(4-fluorophenyl)-4-(4-methyl-1-piperidinyl)- [CAS]	1622-79-3 3575-80-2	BE 651144	Neuroleptic	
Melphalan		148-82-3			
meluadrine	Benzenemethanol, 2-chloro-Alpha-(((1,1-dimethylethyl)amino)methyl)-4-hydroxy-, (R)-, (R*,R*)-2,3-dihydroxybutanedioate (1:1) (salt) [CAS]	134865-37-5	EP 420120	Labour inhibitor	Labour, preterm
memantine	Tricyclo[3.3.1.1 <sup>3,7</sup> ]decan-1-amine, 3,5-dimethyl [CAS]	41100-52-1 19982-08-2	EP 392059	Cognition enhancer	Dementia, AIDS-related
MEN-10700	Acetamide, 2-[[[(5R,6S)-6-[(1R)-1-hydroxyethyl]-2-methyl-7-oxo-4-thia-1-azabicyclo[3.2.0]hept-2-en-3-yl]methyl]methylamino]- [CAS]	195874-55-6	WO 9406803	Beta-lactam antibiotic	Infection, general

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MEN-10755	5,12-Naphthacenedione, 7-[[4-O-(3-amino-2,3,6-trideoxy-Alpha-L-lyxo-hexopyranosyl)-2,6-dideoxy-Alpha-L-lyxo-hexopyranosyl]oxy]-7,8,9,10-tetrahydro-6,9,11-trihydroxy-9-(hydroxyacetyl)-, hydrochloride, (7S,9S)- [CAS]	169317-77-5	WO 9509173	Anticancer, antibiotic	Cancer, breast
Menadiol		481-85-6			
Menadione		58-27-5			
Menadoxime		573-01-3			
Menbutone		3562-99-0			
Menogaril		71628-96-1			
MENT	7Alpha-Methyl-19-nortestosterone			Formulation, transdermal, systemic	Contraceptive, male
menthol	Cyclohexanol, 5-methyl-2-(1-methylethyl)- [CAS]	1490-04-6 89-78-1		Formulation, dermal, topical	Pruritus
Menthyl Valerate		89-47-4			
Meobentine		46464-11-3			
Meparfynol		77-75-8			
mepartricin	Partricin, methyl ester [CAS]	11121-32-7	US 3780173	Antifungal	Infection, Candida, general
Mepazine		60-89-9			
Mepenzolate Bromide		76-90-4			
Meperidine		57-42-1			
Mephenesin		59-47-2			
Mephenoxalone		70-07-5			
Mephentermine		100-92-5			
Mephenytoin		50-12-4			
Mephobarbital		115-38-8			
Mepindolol		23694-81-7			
Mepitiostane		21362-69-6			
mepivacaine	N-(2,6-Dimethylphenyl)-1-methyl-2-piperidinecarboxamide	96-88-8		Formulation, modified-release, >24hr	Pain, post-operative
Mepixanox		17854-59-0			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Meprednisone		1247-42-3			
Meprobamate		57-53-4			
meprosicllarin	Bufa-4,20,22-trienolide, 3-[(6-deoxy-4-O-methyl-Alpha-L-mannopyranosyl)oxy]-14-hydroxy-, (3S)- [CAS]	33396-37-1	DE 1910207	Cardio stimulant	Heart failure
meplazinol	Phenol, 3-(3-ethylhexahydro-1-methyl-1H-azepin-3-yl)- [CAS]	54340-58-8			
mequitazine	10H-Phenothiazine, 10-(1-azabicyclo[2.2.2]oct-3-ylmethyl)- [CAS]	59263-76-2	GB 1285025	Analgesic, other	Pain, general
Meralein		29216-28-2	GB 1250534	Antiallergic, non-asthma	
Meralluride		4386-35-0			
Merbromin		8069-64-5			
Mercaptopmerin		129-16-8			
Mercumallylic Acid		21259-76-7			
Mercuric Chloride, Ammoniated		86-36-2			
Mercuric Oleate		10124-48-8			
Mercuric Oxycyanide		1191-80-6			
		1335-31-5			
merimepodib	Carbamic acid, ((3-(((3-methoxy-4-(5-oxazolyl)phenyl)amino)carbonyl)amino)phenyl)methyl)- (3S)-tetrahydro-3-furanyl ester [CAS]	198821-22-6	US 5807876	Antiviral, other	Infection, hepatitis-C virus
meropenem	1-Azabicyclo[3.2.0]hept-2-ene-2-carboxylic acid, 3-[[5-[(dimethylamino)carbonyl]-3-pyrrolidinyl]thio]-6-(1-hydroxyethyl)-4-methyl-7-oxo-, [4R-[3(3S*,5S*),4Alpha,5S,6S(R*)]]- [CAS]	96036-03-2	EP 126587	Beta-lactam antibiotic	Infection, respiratory tract, lower
Mersalyl		492-18-2			
Mesalamine		89-57-6			
mesalazine	Benzoic acid, 5-amino-2-hydroxy- [CAS]	89-57-6	WO 5541170	Formulation, oral, other	Colitis, ulcerative
Mesna		19767-45-4			
Mesoridazine		5588-33-0			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Mestanolone		521-11-9			
Mesterolone		1424-00-6			
Mestranol		72-33-3			
Mesulfen		135-58-0			
Metaclozapam		84031-17-4			
Metampicillin		6489-97-0			
Metapramine		21730-16-5			
Metaproterenol		586-06-1			
Metaraminol		54-49-9			
Metazocine		3734-52-9			
metergoline	Carbamic acid, [[(8S)-1,6-dimethylergolin-8-yl]methyl]-, phenylmethyl ester [CAS]	17692-51-2	GB 1401935	Antiprolactin	Amenorrhoea
		21631-37-8			
		2706-42-5			
metformin	imidodicarbonimidic diamide, N,N-dimethyl [CAS]	657-24-9		Formulation, modified-release, <=24hr	Diabetes, Type II
Methacholine		62-51-1			
Methacycline		914-00-1			
Methadone		76-99-3			
Methafurylene		531-06-6			
Methamphetamine		537-46-2			
Methandriol		521-10-8			
Methandrostenolone		72-63-9			
Methantheline		53-46-3			
Methapyrilene		91-80-5			
Methaqualone		72-44-6			
Metharbital		50-11-3			
Methazolamide		554-57-4			
Methdilazine		1982-37-2			
Methenamine		100-97-0			
Methenolone		153-00-4			
Methestrol		130-73-4			
Methetoin		5696-06-0			
Methicillin		132-92-3			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Methimazole		60-56-0			
Methiodal		126-31-8			
Methionine		503-40-2			
Methionine		63-68-3			
Methisazone		1910-68-5			
Methital		467-43-6			
Methixene		02/02/4969			
Methocarbamol		532-03-6			
Methohexital		22151-68-4			
methotrexate	L-Glutamic acid, N-[4-[[[2,4-diamino-6-pteridiny]]methyl]methylamino]benzoyl]-[CAS]	59-05-2	US 2512572	Anticancer, antimetabolite	Cancer, general
Methotrimeprazine		60-99-1			
Methoxamine		390-28-3			
Methoxsalen		298-81-7			
Methoxyflurane		76-38-0			
Methoxyphenamine		93-30-1			
Methoxypromazine		61-01-8			
Methscopolamine		155-41-9			
Methsuximide		77-41-8			
Methyclothiazide		135-07-9			
Methyl Blue		28983-56-4			
Methyl Nicotinate		93-60-7			
Methyl Propyl Ether		557-17-5			
Methyl Salicylate		119-36-8			
Methyl tert-Butyl Ether		1634-04-4			
Methylbenzethonium Chloride		25155-18-4			
Methylcobalamin		13422-55-4			
methyldopa	[L-Tyrosine, 3-hydroxy-Alpha-methyl-][CAS]	555-30-6		Formulation, modified-release, <=24hr	Hypertension, general
Methylene Blue		61-73-4			
Methylethergonovine		113-42-8			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
<b>Methylhexaneamine</b>		105-41-9			
methyphenidate	2-Piperidineacetic acid, Alpha-phenyl-, methyl ester [CAS]	113-45-1 298-59-9		Formulation, modified-release, multi	Attention deficit disorder
<b>Methylprednisolone</b>		83-43-2			
	Pregna-1,4-diene-3,20-dione, 21-(acetyloxy)-11-hydroxy-6-methyl-17-(1-oxopropoxy)-, (6Alpha,11B)- [CAS]	86401-95-8	EP 72547	Antipruritic/Inflamm, allergic	Pruritus
methyprednisolone aceponate	Pregna-1,4-diene-3,20-dione, 11,17-dihydroxy-6-methyl-21-[[8-[methyl(2-sulfoethyl)amino]-1,8-dioxoethyl]oxy]-, monosodium salt, (6Alpha,11B)- [CAS]	90350-40-6	JP 59137500	Antiasthma	Asthma
<b>Methylthiouracil</b>		56-04-2			
<b>Methyltrienolone</b>		965-93-5			
<b>Methypyrrolon</b>		125-64-4			
<b>Methysergide</b>		361-37-5			
<b>Metiazinic Acid</b>		13993-65-2			
	Phenol, 4-[2-hydroxy-3-[(1-methylethyl)amino]propoxy]-2,3,6-trimethyl-, 1-acetate [CAS]	22664-55-7	GB 1206148	Antihypertensive, adrenergic	
metipranolol		364-62-5		Formulation, modified-release, <=24hr	Gastro-oesophageal reflux
<b>Metocurine Iodide</b>		7601-55-0			
<b>Metofenazate</b>		388-51-2			
	6-Quinazolininesulfonamide, 7-chloro-1,2,3,4-tetrahydro-2-methyl-3-(2-methylphenyl)-4-oxo- [CAS]	17560-51-9	US 4517179	Antihypertensive, diuretic	
<b>Metopimazine</b>		14008-44-7			
<b>Metopon</b>		143-52-2			
	2-Propanol, 1-[4-(2-methoxyethyl)phenoxy]-3-[(1-methylethyl)amino]-, (+/-)- [CAS]	51384-51-1 56392-17-7 37350-58-6		Formulation, modified-release, other	Hypertension, general
<b>Metralindole</b>		54188-38-4			
<b>Metrizamide</b>		31112-62-6			
<b>Metrizoic Acid</b>		1949-45-7			
<b>Metron S</b>		13946-02-6			



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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Metyrapone		54-36-4			
Metyrosine		672-87-7			
Mexazolam		31868-18-5			
Mexenone		1641-17-4			
Mexiletine		31828-71-4			
mezlocillin	4-Thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid, 3,3-dimethyl-6-[[[3-(methylsulfonyl)-2-oxo-1-imidazolidinyl]carbonyl]amino]phenylacetyl]amino]-7-oxo-, [2S-[2Alpha,5Alpha,6B(S*)]]- [CAS]	42057-22-7 51481-65-3 72539-76-5	GB 1301961	Penicillin, injectable	Infection, general
MFH-244	Benzenecarboximidic acid, 3,4,5-trihydroxy-, ethyl ester, hydrochloride	95933-76-9	US 4623659	Cardiovascular	Reperfusion injury
mianserin	Dibenzo[c,f]pyrazino[1,2-a]azepine, 1,2,3,4,10,14b-hexahydro-2-methyl- [CAS]	21535-47-7 24219-97-4	GB 1173783	Antidepressant	Depression, general
Mibefradil		116644-53-2			
Miboplatin		103775-75-3			
Micafungin		235114-32-6			
miconazole	1H-Imidazole, 1-(2,4-dichlorophenyl)-2[2,4-dichlorophenyl]methoxy[ethyl]	22916-47-8		Formulation, modified-release, other	Infection, Candida, general
Micronomicin		52093-21-7			
midaxifyline	1H-Purine-2,6-dione, 8-{1-aminocyclopentyl)-3,7-dihydro-1,3-dipropyl- [CAS]	151159-23-8	US 5378844	Cardiovascular	Unspecified
midazolam	4H-Imidazo[1,5-a][1,4]benzodiazepine, 8-chloro-6-(2-fluorophenyl)-1-methyl-[CAS]	59467-70-8 59467-94-6	US 4280957	Anaesthetic, injectable	
midecamycin	Leucomycin V, 3,4B-dipropanoate [CAS]	35457-80-8	US 3761588	Macrolide antibiotic	Infection, general
midecamycin acetate	Leucomycin V, 3B,9-diacetate 3,4B-dipropanoate [CAS]	55881-07-7	JP 49124087	Macrolide antibiotic	Infection, general
midosteine	2-Thiophenecarbothioic acid, S-[1-methyl-2-oxo-2-[(tetrahydro-2-oxo-3-thienyl)amino]ethyl] ester [CAS]	94149-41-4	EP 120534	COPD treatment	Emphysema, general

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midodrine	Acetamide, 2-amino-N-[2-(2,5-dimethoxyphenyl)-2-hydroxyethyl]- [CAS]	42318-56-0 42794-76-3	EP 164571	Urological	Incontinence
midostaurin	Benzamide, N-(2,3,10,11,12,13-hexahydro-10-methoxy-9-methyl-1-oxo-9,13-epoxy-1H,9H-dindolo[1,2,3-g:3',2',1'-lm]pyrrolo[3,4-j][1,7]benzodiazonin-11-yl)-N-methyl-, (9Alpha, 10β, 11β, 13Alpha)- [CAS]	120685-11-2	EP 296110	Anticancer, other	Cancer, leukaemia, acute myelogenous
mifepristone	Estra-4,9-dien-3-one, 11-[4-(dimethylamino)phenyl]-17-hydroxy-17-(1-propynyl)-, (11β, 17β)- [CAS]	84371-65-3	EP 57115	Abortifacient	Abortion
miglitol	3,4,5-Piperidinetriol, 1-(2-hydroxyethyl)-2-(hydroxymethyl)-, [2R-(2Alpha, 3β, 4Alpha, 5β)-] [CAS]	72432-03-2	EP 55431	Antidiabetic	Diabetes, Type I
miglustat	3,4,5-Piperidinetriol, 1-butyl-2-(hydroxymethyl)-(2R-(2Alpha, 3β, 4Alpha, 5β)-] [CAS]	72599-27-0	DE 2758025	Metabolic and enzyme disorders	Gaucher's disease
mildronate	Hydrazinium, 2-(2-carboxyethyl)-1,1,1-trimethyl-, inner salt- [CAS]	76144-81-5	WO 8001068	Cardiostimulant	Heart failure
milnacipran	Cyclopropanecarboxamide, 2-(aminomethyl)-N,N-diethyl-1-phenyl-, cis-(±)-[CAS]	101152-94-7 92623-85-3	US 4478836	Antidepressant	Depression, general
Miloxacin	[3,4'-Bipyridine]-5-carbonitrile, 1,6-dihydro-2-methyl-6-oxo- [CAS]	37065-29-5			
milrinone	Ethanaminium, 2-[[[(hexadecyloxy)hydroxyphosphinyl]oxy]-N,N,N-trimethyl-, hydroxide, inner salt [CAS]	78415-72-2	US 4313951	Cardiostimulant	Heart failure
miltefosine	4-Morpholineethanamine, N-(4-methyl-6-phenyl-3-pyridazinyl)- [CAS]	53949-20-5 58066-85-6	EP 225608	Anticancer, other	Cancer, skin, general
minaprine		25905-77-5 25953-17-7	GB 1345880	Antidepressant	Depression, general

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minocycline	2-Naphthacene-carboxamide, 4,7-bis(dimethylamino)-1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-1,11-dioxo-, [4S-(4 $\alpha$ ),4 $\alpha$ ], 5 $\alpha$ .alpha., 12 $\alpha$ ], [CAS]	10118-90-8		Formulation, optimized, microparticles	Infection, oral
minodronic acid	Phosphonic acid, (1-hydroxy-2-imidazo(1,2-a)pyridin-3-ylethylidene)bis-, [CAS]	180064-38-4	EP 354806	Anticancer, other	Cancer, myeloma
minoxidil	2,4-Pyrimidinediamine, 6-(1-piperidinyl)-, 3-oxide [CAS]	38304-91-5	US 4139619	Vasodilator, peripheral	Hypertension, general
Miokamycin		55881-07-7			
mirtazapine	Pyrazino[2,1-a]pyrido[2,3-c][2]benzazepine, 1,2,3,4,10,14b-hexahydro-2-methyl-[CAS]	85650-52-8 61337-67-5	GB 1543171	Antidepressant	Depression, general
misoprostol	Prost-13-en-1-oic acid, 11,16-dihydroxy-16-methyl-9-oxo-, methyl ester, (11 $\alpha$ ,13 $\epsilon$ )-(±)- [CAS]	59122-46-2 59122-48-4	US 4301146	Prostaglandin	Ulcer, gastric
mitomycin	Erythromycin, 8,9-didehydro-N-demethyl-9-deoxy-6,11-dideoxy-6,9-epoxy-12-O-methyl-N-(1-methylethyl)-11-oxo-, (2E)-2-butenedioate (2:1) [CAS]	154802-96-7	WO 9324509	Gastroprokinetic	Gastro-oesophageal reflux
mitiglinide	Calcium (2S)-2-benzyl-3-(cis-hexahydro-2-isoindolylcarbonyl)propionate, dihydrate-[CAS]	145525-41-3	EP 507534	Antidiabetic	Diabetes, Type II
Mitobronitol		488-41-5			
Mitoguazone		459-86-9			
mitolactol	Galactitol, 1,6-dibromo-1,6-dideoxy- [CAS]	10318-26-0	US 3993781	Anticancer, alkylating	Cancer, cervical

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
mitomycin	Azirino[2',3':3,4]pyrrolo[1,2-a]indole-4,7-dione, 6-amino-8-[[[(aminocarbonyloxy)methyl]-1,1a,2,8,8a,8b-hexahydro-8a-methoxy-5-methyl-, [1aS-(1aAlpha,8beta,8aAlpha,8bAlpha)]- [CAS]	50-07-7		Formulation, parenteral, other	Cancer, stomach
<b>Mitotane</b>		53-19-0			
mitoxantrone	9,10-Anthracenedione, 1,4-dihydroxy-5,8-bis[[2-[(2-hydroxyethyl)amino]ethyl]amino]- [CAS]	65271-80-9 70476-82-3	US 4197249	Anticancer, other	Cancer, breast
mitoxantrone	9,10-Anthracenedione, 1,4-dihydroxy-5,8-bis[[2-[(2-hydroxyethyl)amino]ethyl]amino]- [CAS]	65271-80-9 70476-82-9		Formulation, optimized, liposomes	Cancer, general
MIV-210	(3'-Fluoro-2'-3'-dideoxy guanosine)			Antiviral, other	Infection, hepatitis-B virus
mivacurium	Isoquinolinium, 2,2'-[[1,8-dioxo-4-octene-1,8-diyl]bis(oxy-3,1-propanediyl)]bis[1,2,3,4-tetrahydro-6,7-dimethoxy-2-methyl-1-[(3,4,5-trimethoxyphenyl)methyl]-, dichloride, [R*, R*-(E)]- [CAS]	106861-44-3	EP 181055	Muscle relaxant	Anaesthesia, adjunct
<b>Mivazerol</b>		125472-02-8			
mizolastine	4(1H)-Pyrimidinone, 2-[[1-[1-(4-fluorophenyl)methyl]-1H-benzimidazol-2-yl]-4-piperidinyl]methylamino]- [CAS]	108612-45-9	EP 217700	Antiallergic, non-asthma	Rhinitis, allergic, general
<b>Mizoribine</b>		50924-49-7			
MKC-733	(R)-N-(3-quinuclidinyl)-7-oxo-4,7-dihydrothieno[3,2-b]pyridine-6-carboxamide hydrochloride	194093-42-0	JP 09216888	Gastroprokinetic	Gastro-oesophageal reflux
MLN-519	6-Oxa-2-azabicyclo[3.2.0]heptane-3,7-dione, 1-[[1(S)-1-hydroxy-2-methylpropyl]-4-propyl-, (1R,4R,5S)- [CAS]	211866-70-5	WO 9915183	Neuroprotective	Ischaemia, cerebral
MLN-576	4-Methoxy-benzo[a]phenazine-11-carboxylic acid (2-(dimethylamino)-1-(R)-methyl-ethyl)-amide			Anticancer, other	Cancer, general

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
moclobemide	Benzamide, 4-chloro-N-[2-(4-morpholinyl)ethyl]- [CAS]	71320-77-9	EP 326023	Antidepressant	Depression, general
modafinil	Acetamide, 2-[(diphenylmethyl)sulfinyl]- [CAS]	68693-11-8	DE 2809625	Psychostimulant	Narcolepsy
moexipril	3-Isoquinolinecarboxylic acid, 2-[2-[[1-(ethoxycarbonyl)-3-phenylpropyl]amino]-1-oxopropyl]-1,2,3,4-tetrahydro-6,7-dimethoxy- (3S-(2(R*(R*),3R*)))- [CAS]	103775-10-6 103775-14-0	US 4344949	Antihypertensive, renin system	Hypertension, general
Mofarotene		125533-88-2			
Mofebutazone		2210-63-1			
Mofegiline		119386-96-8			
mofezolac	5-Isoxazoleacetic acid, 3,4-bis(4-methoxyphenyl)- [CAS]	78967-07-4	EP 26928	Analgesic, NSAID	Pain, post-operative
MOL-6131	N-[4-(aminomethyl)benzyl]-8(S)-[1-[4-[2-(4-aminophenyl)-acetamido]butyl]piperidin-4-yl]-2-(naphthalen-1-ylmethyl)-1,3-dioxo-2,3,5,8-tetrahydro-1H-[1,2,4]triazolo[1,2-a]pyridazine-5(R)-carboxamide			Antiasthma	Asthma
Molindone		7416-34-4			
molsidomine	Synone imine, N-(ethoxycarbonyl)-3-(4-morpholinyl)- [CAS]	25717-80-0	US 3769283	Vasodilator, coronary	
mometasone	Pregna-1,4-diene-3,20-dione, 9,21-dichloro-11,17-dihydroxy-16-methyl-, (11β,16α)- [CAS]	105102-22-5 83919-23-7	EP 57401	Antipruritic/inflamm, allergic	Psoriasis
Monatepil		103377-41-9			
Monobenzzone		103-16-2			
monolaurin	Dodecanoic acid, monoester with 1,2,3-propanetriol [CAS]	27215-38-9	US 4885282	Dermatological	Ichthyosis
montelukast	Cyclopropaneacetic acid, 1-[[[1-[3-[2-(7-Chloro-2-quinolinyl)ethenyl]phenyl]-3-[2-(1-hydroxy-1-methylethyl)phenyl]propyl]thio]methyl]-, [CAS]	151767-02-1 158966-92-8		Antiasthma	Asthma
Monteplase		122007-85-6			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Moperone		1050-79-9			
Mopidamol		13665-88-8			
Moprolol		5741-22-0			
moracizine	Carbamic acid, [10-[3-(4-morpholinyl)-1-oxopropyl]-10H-phenothiazin-2-yl]-, ethyl ester [CAS]	29560-58-5 31883-05-3	US 3864487	Antiarrhythmic	Tachycardia, ventricular
Morazone		6536-18-1			
Moricizine		31883-05-3			
Moroxydine		3731-59-7			
Morphazinamide		952-54-5			
morphine	Morphinan-3,6-diol, 7,8-didehydro-4,5-epoxy-17-methyl- (5 $\alpha$ ),6 $\alpha$ )-, [CAS]	57-27-2 6055-06-7 64-31-3		Formulation, parenteral, other	Pain, cancer
morphine-6-glucuronide	morphine-6-glucuronide			Formulation, inhalable, systemic	Pain, general
mosapramine	Spiro[imidazo[1,2-a]pyridine-3(2H),4'-piperidin]-2-one, 1'-[3-(3-chloro-10,11-dihydro-5H-dibenz[b,f]azepin-5-yl)propyl]hexahydro-, (+/-)- [CAS]	89419-40-9 98043-60-8	US 4337260	Neuroleptic	
mosapride	Benzamide, 4-amino-5-chloro-2-ethoxy-N-((4-((4-fluorophenyl)methyl)-2-morpholinyl)methyl)- [CAS]	112885-41-3 112885-42-4	EP 243959	GI inflammatory/bowel disorders	Gastritis
motexafin gadolinium	Gadolinium, bis(acetato-kappaO)(9,10-diethyl-20,21-bis(2-(2-methoxyethoxy)ethoxy)-4,15-dimethyl-8,11-imino-3,16:16,13-dinitrilo-1,18-benzodiazacycloicosine-5,14-dipropanolato-kappaN1, kappaN18, kappaN23, kappaN24, kappaN25), (PB-7-11-233'2'4) [CAS]	246252-06-2		Radio/chemosensitizer	Cancer, brain
Motretinide		56281-36-8			
Moveltipril		85856-54-8			
Moxalactam		64952-97-2			
Moxastine		3572-74-5			
Moxaverine		10539-19-2			
Moxestrol		34816-55-2			



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moxifloxacin	3-Quinolonecarboxylic acid, 1-cyclopropyl-6-fluoro-1,4-dihydro-8-methoxy-7-(octahydro-6H-pyrrolo(3,4-b)pyridin-6-yl)-4-oxo-, hydrochloride (4aS-cis)- [CAS]	186826-86-8 151096-09-2	DE 19546249	Quinolone antibacterial	Infection, respiratory tract, general
moxisylyte	Phenol, 4-[2-(dimethylamino)ethoxy]-2-methyl-5-(1-methylethyl)-, acetate (ester), [CAS]	964-52-3 54-32-0		Male sexual dysfunction	Impotence
moxonidine	5-Pyrimidinamine, 4-chloro-N-(4,5-dihydro-1H-imidazol-2-yl)-6-methoxy-2-methyl- [CAS]	75438-57-2	DE 2849537	Antihypertensive, other	Hypertension, general
M-PGA	(-)-(S)-2-Methyl-2-(1-oxo-2,3-dihydro-1H-isindol-2-yl)pentanedioic acid		US 5712291	Anticancer, other	Cancer, general
MPI-5010	Platinum diamminedichloro-, (SP-4-2) + (R)-4-[1-hydroxy-2-(methylamino)-ethyl]-1,2-benzenediol		US 6224883	Formulation, parenteral, other	Cancer, head and neck
MPI-5020	2,4-(1H,3H)-Pyrimidin-2-one, 5-fluoro- [CAS]	51-21-8	US 5750146	Formulation, parenteral, other	Cancer, breast
MPL		198076-81-2		Immunostimulant, other	Vaccine adjunct
MRS-1754			US 6060481	Antiasthma	Asthma
MS-209	1-Piperazineethanol, 4-(diphenylacetyl)-Alpha-[(5-quinolinyl)oxy)methyl]-, (2E)-2-butenedioate(2:3) (salt) [CAS]	158681-49-3		Radio/chemosensitizer	Cancer, breast
MS-275	N-(2-Aminophenyl)-4-[N-(pyridin-3-yl-methoxycarbonyl)aminomethyl]benzamide			Anticancer, antimetabolite	Cancer, lung, general
MS-325		201688-00-8			
MS-377			EP 839805	Neuroleptic	Schizophrenia
Mupirocin		12650-69-0			
Muscarine		300-54-9			
Muzolimine		55294-15-0			
MX-1013			US 6153591	Hepatoprotective	Unspecified

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mycophenolate mofetil	4-Hexenoic acid, 6-(1,3-dihydro-4-hydroxy-6-methoxy-7-methyl-3-oxo-5-isobenzofuranyl)-4-methyl-, 2-(4-morpholinyl)ethyl ester, (E)- [CAS]	116680-01-4 128794-94-5	WO 9119498	Immunosuppressant	Transplant rejection, general
	4-hexanoic acid, 6-(1,3-dihydro-4-hydroxy-6-methoxy-7-methyl-3-oxo-5-isobenzofuranyl)-4-methyl-,	37415-62-6 24280-93-1		Formulation, oral, enteric-coated	Transplant rejection, general
Myrophine		467-18-5			
N-(Hydroxymethyl)nicotina		3569-99-1			
N,N,N',N'-Tetraethylphthalamide		83-81-8			
N <sub>2</sub> -Formylsulfisomidine		795-13-1			
N <sub>4</sub> -β-o-Glucosylsulfanilamide		53274-53-6			
N <sub>4</sub> -Sulfanilylsulfanilamide		547-52-4			
Nabilone		51022-71-0			
nabumetone	2-Butanone, 4-(6-methoxy-2-naphthalenyl)- [CAS]	42924-53-8	GB 1476721	Anti-inflammatory	Arthritis, osteo
N-acetylcysteine	L-Cysteine, N-acetyl- [CAS]	616-91-1		Anticancer, other	Cancer, general
N-Acetylmethionine		65-82-7			
nadifloxacin	1H,5H-Benzo[[j]quinolizine-2-carboxylic acid, 9-fluoro-6,7-dihydro-8-(4-hydroxy-1-piperidinyl)-5-methyl-1-oxo-, (+/-)- [CAS]	124858-35-1	US 4399134	Quinolone antibacterial	Acne
nadolol	2,3-Naphthalenediol, 5-[3-[(1,1-dimethylethyl)amino]-2-hydroxypropoxy]-1,2,3,4-tetrahydro- [CAS]	42200-33-9	US 4346106	Antihypertensive, adrenergic	
Nadoxolol		54063-51-3			

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nafamostat	Benzoic acid, 4- [(aminoiminomethyl)amino]-, 6- (aminoiminomethyl)-2-naphthalenyl ester- [CAS]	80251-32-7 81525-10-2 82956-11-4	EP 450232	GI inflammatory/bowel disorders	Pancreatitis
nafarelin	Luteinizing hormone-releasing factor (p1g), 6-[3-(2-naphthalenyl)-D-alanine]-[CAS]	76932-56-4 86220-42-0	EP 21234	Releasing hormones	Endometriosis
<b>Nafcilin</b>		147-52-4			
<b>Nafronyl</b>		31329-57-4			
naftidrofuryl	2-Furanpropanoic acid, tetrahydro-Alpha- (1-naphthalenylmethyl)-, 2- (diethylamino)ethyl ester	31329-57-4			Unspecified
naftifine	1-Naphthalenemethanamine, N-methyl-N- (3-phenyl-2-propenyl)-, (E)- [CAS]	65472-88-0 65473-14-5	US 4282251	Formulation, modified-release, other Antifungal	Infection, dermatological
naftopidil	1-Piperazineethanol, 4-(2-methoxyphenyl)- Alpha-[(1-naphthalenyloxy)methyl]- [CAS]	57149-07-2	US 3997666	Antihypertensive, adrenergic	Hypertension, general
nalbuphine	Morphinan-3,6,14-triol, 17- (cyclobutylmethyl)-4,5-epoxy-, (5Alpha,6Alpha)- [CAS]	20594-83-6 23277-43-2	US 3393197	Analgesic, other	Pain, general
<b>Nalidixic Acid</b>		389-08-2			
nalmeferene	Morphinan-3,14-diol, 17- (cyclopropylmethyl)-4,5-epoxy-6- methylene-, (5Alpha)- [CAS]	55096-26-9	JP 56167687	Dependence treatment	Poisoning, drug
<b>Nalorphine</b>		62-67-9			
naloxone	Morphinan-6-one, 17-allyl-4,5Alpha-epoxy- 3,14-dihydroxy-, hydrochloride [CAS]	357-08-4 465-65-6		Septic shock treatment	
naltrexone	Morphinan-6-one, 17-(cyclopropylmethyl)- 4,5-epoxy-3,14-dihydroxy-, (5Alpha)-[CAS]	16590-41-3 16676-29-2	US 3332950	Dependence treatment	Addiction, narcotic/opiate
<b>NAMI</b>	Imidazolium trans(imidazole)(dimethylsulfoxide)tetrachl ororuthenate (III)			Anticancer, other	Cancer, general

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naminiidil	Guanidine, N-cyano-N'-(4-cyanophenyl)-N''-[(1R)-1,2,2-trimethylpropyl]-[CAS]	220641-11-2		Dermatological	Alopecia, general
Nandrolone		434-22-0			
Naphazoline		835-31-4			
Naphthalene		91-20-3			
naproxen betainate	Methanaminium, 1-carboxy-N, N, N-trimethyl- salt with (R)-6-methoxy- Alpha-methyl-2-naphthaleneacetic acid (1:1), sodium salt [CAS]	104124-26-7	US 4672077	Antiarthritic, other	Arthritis, rheumatoid
naproxen	2-Naphthaleneacetic acid, 6-methoxy-Alpha-methyl-, [CAS]	26159-34-2			
naratriptan	1H-Indole-5-ethanesulfonamide, N-methyl-3-(1-methyl-4-piperidinyl)- [CAS]	22204-53-1	GB 1211134	Analgesic, NSAID	Pain, general
Narceine		121679-13-8	EP 303507	Antimigraine	Migraine
Narcobarbital		131-28-2			
Natamycin		125-55-3			
nateglinide	D-phenylalanine, N-((4-(1-methylethyl)cyclohexyl)carbonyl)-, trans-[CAS]	7681-93-8			
N-Butyldeoxynojirimycin		105816-04-4	EP 196222	Antidiabetic	Diabetes, Type II
N-Butyldeoxynojirimycin		72599-27-0			
N-Butylscopolammonium Bromide		149-64-4			
NC-503			US 5643562	Anti-inflammatory	Amyloidosis
NC-531			US 5643562	Cognition enhancer	Alzheimer's disease
NCX-1000			WO 0061604	Hepatoprotective	Cirrhosis, hepatic
NCX-4016	Benzoic acid, 2-(acetyloxy)-, 2-((nitrooxy)methyl)phenyl ester [CAS]	175033-36-0	WO 9716405	Symptomatic antidiabetic	Insulin-related metabolic syndrome
NCX-456	Benzoic acid, 5-amino-2-hydroxy-, 4-(nitrooxy)butyl ester [CAS]	256499-26-0		GI inflammatory/bowel disorders	Inflammatory bowel disease

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NCX-950	Alpha'-[[(1,1-dimethylethyl)amino]methyl]-4-hydroxy-1,3-benzenedimethanol nitrate				
<b>n-Docosanol</b>		661-19-8		Antiasthma	Asthma
NE-100	Benzeneethanamine, 4-methoxy-3-(2-phenylethoxy)-N,N-dipropyl-, hydrochloride [CAS]	149409-57-4	WO 9307113	Neuroleptic	Schizophrenia
<b>Nealbarbital</b>		561-83-1			
nebivolol	2H-1-Benzopyran-2-methanol, Alpha,Alpha'-[iminobis(methylene)]bis[6-fluoro-3,4-dihydro]-, (2R*(R*(S*)))-(1+)-[CAS]	118457-14-0	EP 145067	Antihypertensive, adrenergic	Hypertension, general
nebostinel	N1-(4,4-Dimethylcyclohexyl)-L-isoglutamine	99200-09-6	EP 0688312	Cognition enhancer	Unspecified
<b>Nebracetam</b>		163000-63-3			
nedaplatin	Platinum, diammine(hydroxyacetato(2-)-O1,O2)-, (SP-4-3)- [CAS]	97205-34-0			
nedocromil	4H-Pyranol[3,2-g]quinoline-2,8-dicarboxylic acid, 9-ethyl-6,9-dihydro-4,6-dioxo-10-propyl- [CAS]	95734-82-0	EP 216362	Anticancer, alkylating	
nefazodone	3H-1,2,4-Triazol-3-one, 2-[3-(4-(3-chlorophenyl)-1-piperazinyl)propyl]-5-ethyl-2,4-dihydro-4-(2-phenoxyethyl)-, [CAS]	69049-73-6			Rhinitis, allergic, general, Ocular disorder, general
nefracetam	1-Pyrrolidineacetamide, N-(2,6-dimethylphenyl)-2-oxo- [CAS]	69049-74-7	EP 555718	Antiasthma, Ophthalmological	
nefopam	1H-2,5-Benzoxazocine, 3,4,5,6-tetrahydro-5-methyl-1-phenyl- [CAS]	82752-99-6	US 4338317	Antidepressant	Depression, general
<b>Negamycin</b>		83366-66-9			
nelfinavir	3-Isoquinolinecarboxamide, N-(1,1-dimethylethyl)decahydro-2-(2-hydroxy-3-((3-hydroxy-2-methylbenzoyl)amino)-4-(phenylthio)butyl)-, (3S-(2S*,3S*),3Alpha,4aB,8aB)-, [CAS]	77191-36-7	US 4341790	Cognition enhancer	Dementia, senile, general
<b>Nemonapride</b>		13669-70-0			
<b>Neostigmine</b>		23327-57-3	US 3487153	Analgesic, NSAID	
		33404-78-3			
		159989-65-8			
		159989-64-7			
		75272-39-8		Antiviral, anti-HIV	Infection, HIV/AIDS
		59-99-4			



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nepadutant	Cyclo[3-amino-L-alanyl-L-leucyl-N-[2-(acetylamino)-2-deoxy-β-D-glucopyranosyl]-L-asparaginy]-L-Alpha-aspartyl-L-tryptophyl-L-phenylalanyl], (4-1)-lactam [CAS]	183747-35-5	WO 9628467	Antiasthma	Asthma
neramexane	1,3,3,5,5-pentamethylcyclohexylamine	202807-80-5 219810-59-0		Dependence treatment	Addiction, alcohol
neridronic acid	Phosphonic acid, (6-amino-1-hydroxyhexylidene)bis- [CAS]	79778-41-9		Musculoskeletal	Osteogenesis imperfecta
Nerifolin		466-07-9			
N-Ethylamphetamine		457-87-4			
neticonazole	1H-imidazole, 1-[2-(methylthio)-1-[2-(pentyloxy)phenyl]ethenyl]-, monohydrochloride, (E)- [CAS]	130773-02-3 130726-68-0	EP 445540	Antifungal	Infection, Candida, general
netilmicin	D-Streptamine, O-3-deoxy-4-C-methyl-3-(methylamino)-β-L-arabinopyranosyl-(1-6)-O-[2,6-diamino-2,3,4,6-tetra-deoxy-Alpha-D-glycero-hex-4-enopyranosyl-(1-4)]-2-deoxy-N1-ethyl- [CAS]	56391-56-1 56391-57-2	GB 1473733	Aminoglycoside antibiotic	Infection, general
nevirapine	6H-Dipyrido[3,2-b:2',3'-e][1,4]diazepin-6-one, 11-cyclopropyl-5,11-dihydro-4-methyl-[CAS]	129618-40-2	EP 429987	Antiviral, anti-HIV	Infection, HIV/AIDS
NGD-98-2			WO 9635689	Anxiolytic	Anxiety, general
Nialamide		51-12-7			
Niaprazine		27367-90-4			
Nicametate		3099-52-3			
nicaraven	3-Pyridinecarboxamide, N,N'-(1-methyl-1,2-ethanediyl)bis- [CAS]	79455-30-4	EP 29602	Neuroprotective	Haemorrhage, subarachnoid
nicardipine	3,5-Pyridinedicarboxylic acid, 1,4-dihydro-2,6-dimethyl-4-(3-nitrophenyl)-, methyl 2-[methyl(phenylmethyl)amino]ethyl ester [CAS]	54527-84-3 55985-32-5	US 3985758	Neuroprotective	Hypertension, general
nicergoline	Ergoline-8-methanol, 10-methoxy-1,6-dimethyl-, (8b)-, 5-bromo-3-pyridinecarboxylate(ester)	27848-84-6		Formulation, modified-release, other	Unspecified



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Niceritrol		5868053			
Niclosamide		50-65-7			
Nicoclonate		10571-59-2			
Nicofuranose		15351-13-0			
Nicomol		27959-26-8			
Nicomorphine		639-48-5			
nicorandil	3-Pyridinecarboxamide, N-[2-(nitrooxy)ethyl]- [CAS]	65141-46-0	US 4792564	Vasodilator, coronary	Hypertension, general
Nicotinamide		98-92-0			
nicotine	Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)- [CAS]	54-11-5		Formulation, inhalable, other	Addiction, nicotine
Nicotinic Acid		59-67-6			
Nicotinic Acid Benzyl Ester		94-44-0			
Nicotinyl Alcohol		100-55-0			
nifedipine	4-(2-nitrophenyl)-2,6-dimethyl-3,5-dicarbomethoxy-1,4-dihydropyridine	21829-25-4	GB 1173862	Vasodilator, coronary	Hypertension, general
nifekalant	2,4(1H,3H)-Pyrimidinedione, 6-[[2-[(2-hydroxyethyl)](3-(4-nitrophenyl)propyl]amino]ethyl]amino]-1,3-dimethyl-, [CAS]	130636-43-0 130656-51-8	EP 369627	Antiarrhythmic	Arrhythmia, general
Nifenalol		7413-36-7			
Niflumic Acid		4394-00-7			
Nifuratel		4936-47-4			
Nifurfoline		3363-58-4			
Nifuroxazide		965-52-6			
Nifuroxime		6236051			
Nifurpirinol		13411-16-0			
Nifurprazine		1614-20-6			
Nifurtimox		23256-30-6			
Nifurtoinol		1088-92-2			

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nifurzide	2-Thiophenecarboxylic acid, 5-nitro-, [3-(5-nitro-2-furanyl)-2-propenylidene]hydrazide [CAS]	39978-42-2	US 3847911	Antidiarrhoeal	Infection, GI tract
NIK-254	Gentamicin, sulfate (salt) [CAS]	1405-41-0		Formulation, other	Infection, general
<b>Nikethamide</b>		59-26-7			
nilutamide	2,4-Imidazolidinedione, 5,5-dimethyl-3-[4-nitro-3-(trifluoromethyl)phenyl]-[CAS]	63612-50-0	US 4472382	Anticancer, hormonal	Cancer, prostate
nilvadipine	3,5-Pyridinedicarboxylic acid, 2-cyano-1,4-dihydro-6-methyl-4-(3-nitrophenyl)-, 3-methyl 5-(1-methylethyl) ester [CAS]	75530-68-6	US 4338322	Antihypertensive, other	Hypertension, general
nimesulide	Methanesulfonamide, N-(4-nitro-2-phenoxyphenyl)- [CAS]	51803-78-2	US 3840597	Anti-inflammatory	Pain, general
<b>Nimetazepam</b>		2011-67-8			
nimodipine	3,5-Pyridinedicarboxylic acid, 1,4-dihydro-2,6-dimethyl-4-(3-nitrophenyl)-, 2-methoxyethyl 1-methylethyl ester [CAS]	66085-59-4	EP 533014	Neuroprotective	
<b>Nimorazole</b>		6506-37-2			
	Urea, N'-[(4-amino-2-methyl-5-pyrimidinyl)methyl]-N-(2-chloroethyl)-N-nitroso-[CAS]	103745-00-2 42471-28-3 55661-38-6			
nimustine		2179-16-0	GB 1374344	Anticancer, alkylating	Cancer, brain
<b>Ninopterin</b>					
	N-[4(S)-(Cyclopropylamino)-3-(R)-hydroxy-2,2-dimethyl-7-nitro-3,4-dihydro-2H-1-benzopyran-6-yl]-4-methoxybenzeneacetamide				
NIP-142			WO 9804542	Antiarrhythmic	Fibrillation, atrial
	N'-[3,5-Bis(trifluoromethyl)benzyl]-N-[3-[N-[1-(4-fluorobenzyl)benzimidazol-2-yl]-amino]propyl-N-methylurea hydrochloride			Antipruritic/inflamm, allergic	Eczema, atopic
NIP-531					
	N-[2-[[5-[(dimethylamino)methyl]furfurylthio]ethyl]-2-nitro-N'-piperonyl-1,1-ethenediamine	84845-75-0	GB 2104071	Antilucer	Ulcer, GI, general
niperotidine					

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
nipradilol	2H-1-Benzopyran-3-ol, 3,4-dihydro-8-[2-hydroxy-3-[(1-methylethyl)amino]propoxy]-, 3-nitrate [CAS]	81486-22-8 86247-86-1	EP 42299	Formulation, mucosal, topical	Glaucoma
<b>Niridazole</b>		61-57-4			
nisoldipine	3,5-Pyridinedicarboxylic acid, 1,4-dihydro-2,6-dimethyl-4-(2-nitrophenyl)-, methyl 2-methylpropyl ester- [CAS]	63675-72-9	GB 1516793	Antihypertensive, other	Hypertension, general
nitazoxanide	Benzamide, 2-(acetyloxy)-N-(5-nitro-2-thiazolyl)- [CAS]	55981-09-4	US 5387598	Protozoacide	Infection, GI tract
nitisinone	1,3-Cyclohexanedione, 2-[2-nitro-4-(trifluoromethyl)benzoyl]- [CAS]	104206-65-7	EP 186118	Metabolic and enzyme disorders	Cirrhosis, hepatic
nitracrine	1,3-Propanediamine, N,N-dimethyl-N'-(1-nitro-9-acridinyl)- [CAS]	4533-39-5 6514-85-8	FR 1458183	Anticancer, other	Cancer, ovarian
<b>Nitrazepam</b>		146-22-5			
nitrendipine	3,5-Pyridinedicarboxylic acid, 1,4-dihydro-2,6-dimethyl-4-(3-nitrophenyl)-, ethyl methyl ester- [CAS]	39562-70-4	GB 1358951	Antihypertensive, other	Hypertension, general
nitroflurbiprofen	(1,1'-Biphenyl)-4-acetic acid, 2-fluoro-Alpha-methyl-, 4-(nitrooxy)butyl ester [CAS]	158836-71-6	EP 670825	Urological	Incontinence
<b>Nitrofurantoin</b>		67-20-9			
<b>Nitrofurazone</b>		59-87-0			
nitroglycerin	1,2,3-Propanetriol, trinitrate [CAS]	55-63-0		Formulation, transdermal, patch	Angina, general
<b>Nitromersol</b>		133-58-4			
nitronaproxen	2-Naphthaleneacetic acid, 6-methoxy-Alpha-methyl 4-(nitrooxy)butyl ester (AlphaS)- [CAS]	163133-43-5	WO 9509831	Analgesic, NSAID	Pain, post-operative
nitroxazepine	Dibenz[b,f][1,4]oxazepin-11(10H)-one, 10-[3-(dimethylamino)propyl]-2-nitro-, monohydrochloride [CAS]	16398-39-3	NL 6608671	Antidepressant	
<b>Nitroxoline</b>		4008-48-4			
nizatidine	1,1-Ethenediamine, N-[2-[[[2-[(dimethylamino)methyl]-4-thiazolyl]methyl]thio]ethyl]-N'-methyl-2-nitro- [CAS]	76963-41-2	EP 49618	Anticancer	Ulcer, duodenal

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Nizafenone	3-(2-methylcarboxymethyl)-6-methoxy-8-hydroxy-isocoumarin	54533-85-6			
NM-3			JP 08176138	Anticancer, other	Cancer, general
NM-702	4-Bromo-5-(3-pyridylmethylamino)-6-[3-(4-chlorophenyl)propoxy]-3(2H)pyridazinone hydrochloride			Antithrombotic	Peripheral vascular disease
N-Methylephedrine		552-79-4			
N-Methylepinephrine		554-99-4			
N-Methylglucamine		6284-40-8			
NN-414	6-chloro-3-(1-methylcyclopropylamino)-4H-thieno[3,2-e]-[1,2,4]thiadiazine-1,1-dioxide			Antidiabetic	Diabetes, Type II
NNC-05-1869	(R)-1-(3-(10,11-dihydro-5H-dibenzof[a,d]cyclohepten-5-ylidene)-1-propyl)-3-piperidine carboxylic acid			Symptomatic antidiabetic	Neuropathy, diabetic
Nogalamycin		1404-15-5			
nolatrexed	4(1H)-Quinazolinone, 2-amino-6-methyl-5-(4-pyridinylthio)-, [CAS]	152946-68-4 147149-76-6	WO 9320055	Anticancer, antimetabolite	Cancer, liver
nolomirole	Propanoic acid, 2-methyl-, 5,6,7,8-tetrahydro-6-(methylamino)-1,2-naphthalenediyl ester, hydrochloride, (+/-)-[CAS]		WO 9529147	Cardio stimulant	Heart failure
nolpitanium	1-Azoniabicyclo[2.2.2]octane, 1-[2-[3-(4-dichlorophenyl)-1-[3-(1-methylethoxy)phenyl]acetyl]-3-piperidinyl]ethyl]-4-phenyl-, chloride, (S)-[CAS]	153050-21-6	EP 591040	GI inflammatory/bowel disorders	Inflammatory bowel disease
nomegestrol	19-Norpregna-4,6-diene-3,20-dione, 17-(acetyloxy)-6-methyl- [CAS]	58652-20-3	DE 2522533	Menstruation disorders	Menstrual disorder, general
Nomifensine		24526-64-5			
Noprysulfamide		576-97-6			
Norbolethone		1235-15-0			

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Nordazepam		1088-11-5			
Nordefrin		6539-57-7 (unspecified); 74812-63-8 (R*,S*)-(±)- form			
Nordihydroguaiaretic Acid		27686-84-6 (meso-form); 500-38-9 (unspecified)			
Norelgestromin, Ethinyl Estradiol					
Norepinephrine		51-41-2			
Norethandrolone		52-78-8			
Norethindrone		68-22-4			
Norethynodrel		68-23-5			
Norfenefrine		536-21-0			
norfloxacin	3-Quinolonecarboxylic acid, 1-ethyl-6-fluoro- 1,4-dihydro-4-oxo-7-(1-piperazinyl)- [CAS]	68077-27-0 70458-96-7	US 4146719	Quinolone antibacterial	Infection, general
Norgesterone		13563-60-5			
Norgestimate		35189-28-7			
Norgestrel		6533-00-2			
Norgestrienone		848-21-5			
Norlevorphanol		1531-12-0			
Normethadone		467-85-6			
Normethandrone		514-61-4			
Normorphine		466-97-7			
Norphenazone		89-25-8			
Norpipanone		561-48-8			
Norpseudoephedrine		492-39-7			
Nortriptyline		72-69-5			
Norvinisterone		6795-60-4			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Noscapine		128-62-1			
Novembichin		1936-40-9			
Novobiocin		303-81-1			
Noxiptilin		3362-45-6			
Noxythiolin		15599-39-0			
NS-1209	Butanoic acid, 2-[[[5-[4- [(dimethylamino)sulfonyl]phenyl]- 1,2,6,7,8,9-hexahydro-8-methyl-2-oxo-3H- pyrrolo[3,2-h]isoquinolin-3- ylidene]amino]oxy]-3-hydroxy- [CAS]	254751-28-5	WO 9426747	Antiepileptic	Epilepsy, general
NS-1231	5-(4-chlorophenyl)-6,7,8,9-tetrahydro-1H- pyrrolo-(3,2-h)naphthalene-2,3-dione-3- oxime			Neuroprotective	Ischaemia, cerebral
NS-126			US 5063222	Antiallergic, non-asthma	Rhinitis, allergic, general
NS-220	2-Methyl-5-[4-[5-methyl-2-(4- methylphenyl)-4-oxazolyl]butyl]-1,3- dioxane-1,2-carboxylic acid				
NS-2330	NS 2330 [CAS]	402856-42-2		Hypolipaeamic/Antiatherosclerosis	Atherosclerosis
NS5A inhibitors				Cognition enhancer	Alzheimer's disease
NS-7	Pyrimidine, 4-(4-fluorophenyl)-2-methyl-6- [[5-(1-piperidinyl)pentyl]oxy]-, monohydrochloride [CAS]	178429-67-9	US 6030785	Antiviral, other	Infection, hepatitis-C virus
NS-8	2-Amino-5-(2-fluorophenyl)-4-methyl-1H- pyrrole-3-carbonitrile		WO 9607641	Neuroprotective	Ischaemia, cerebral
NSC-330507	17-Allylaminogeldanamycin			Urological	Incontinence
NSC-619534	2-chloroethyl phenyl selenone			Anticancer, antibiotic	Cancer, general
NSC-697726	2,5-diazinidinyl-3-[hydroxymethyl]6-methyl- 1,4-benzoquinone			Anticancer, alkylating	Cancer, general
N-Sulfanilyl-3,4- xylamide		120-34-3		Anticancer, antibiotic	Cancer, general



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NU-6027	2,4-Pyrimidinediamine, 6-(cyclohexylmethoxy)-5-nitroso- [CAS]	220036-08-8		Anticancer, other	Cancer, general
NV-07	2,4,6-(1H,3H,5H)-Pyrimidine-5-ethyl-5-sec-pentyl-, 2-oxime [CAS]	53745-16-7	US 6455032	Antipruritic/inflamm, non-allergic	Keratosis
NVP-SRA880	[(3R,4aR,10aR)-1,2,3,4,4a,5,10,10a-Octahydro-6-methoxy-1-methyl-benz[g]quinoline-3-carboxylic acid-4-(4-nitrophenyl)piperazine amide, hydrogen maleate				
NW-1029	(S)-(+)-2-[4-(2-fluorobenzyloxy)benzylamino]propanamide methansulfonate			Neurological	Unspecified
NXY-059	CPI 22 [CAS]	168021-79-2	US 5780510	Analgesic, other	Pain, general
Nylidrin		447-41-6		Neuroprotective	Ischaemia, cerebral
NZ-314	1-[imidazolidineacetic acid, 3-[(3-nitrophenyl)methyl]-2,4,5-trioxo- [CAS]	128043-99-2	EP 353198	Symptomatic antidiabetic	Neuropathy, diabetic
NZ-419	5-hydroxy-1-methylimidazolidine-2,4-dione		EP 412940	Urological	Renal failure
Obidoxime Chloride		114-90-9			
OC-108	OC 108 [CAS]	162602-62-2		Vasoprotective, topical	Venous insufficiency
ocinaplon	Methanone, 2-pyridinyl[7-(4-pyridinyl)pyrazolo[1,5-a]pyrimidin-3-yl]- [CAS]	96604-21-6	EP 129847	Anxiolytic	Generalized anxiety disorder
Octabenzzone		1843-05-6			
Octacaine		13912-77-1			
Octamoxin		4684-87-1			
Octaverine		549-68-8			
octenidine	1-Octanamine, N,N'-(1,10-decanediylidene)-1,4-bis-(4-pyridinyl)-bis- [CAS]	70775-75-6 71251-02-0 86767-75-1	WO 8705501	Stomatological	Periodontitis
Octodrine		543-82-8			
Octopamine		104-14-3			
Octotiamine		137-86-0			

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octreotide	L-Cysteinamide, D-phenylalanyl-L-cysteinyl-L-phenylalanyl-D-tryptophyl-L-lysyl-L-threonyl-N-[2-hydroxy-1-(hydroxymethyl)propyl]-, cyclic (2-7)-disulfide, [R-(R*, R*)]- [CAS]	83150-76-9		Formulation, fixed-dose combinations	Cancer, general
Octyl Methoxycinnamate		5466-77-3			
ofloxacin	7H-Pyrido[1,2,3-de]-1,4-benzoxazine-6-carboxylic acid, 9-fluoro-2,3-dihydro-3-methyl-10-(4-methyl-1-piperazinyl)-7-oxo-, (+/-)- [CAS]	82419-36-1	EP 47005	Quinolone antibacterial	
o-Iodohippurate		133-17-5			
olanzapine	10H-Thieno(2,3-b)(1,5)benzodiazepine, 2-methyl-4-(4-methyl-1-piperazinyl)- [CAS]	132539-06-1	EP 454436	Neuroleptic	Schizophrenia
Oleandrin		465-16-7			
Oleic Acid		112-80-1			
olmesartan medoxomil	1H-Imidazole-5-carboxylic acid, 4-(1-hydroxy-1-methylethyl)-2-propyl-1-((2'-(1H-tetrazol-5-yl)(1,1'-biphenyl)-4-yl)methyl)-, (5-methyl-2-oxo-1,3-dioxol-4-yl) methyl ester [CAS]	144689-63-4	EP 503785	Antihypertensive, renin system	Hypertension, general
olopatadine	11-[(Z)-3-(Dimethylamino)propylidene]-6,11-dihydrodibenz[b,e]oxepin-2-acetic acid, monohydrochloride	113806-05-6 140462-76-6	EP 235796	Ophthalmological	Conjunctivitis
olpadronic acid	Monosodium 3-dimethylamino-1-(hydroxypropylidene)-1,1-bisphosphonate	63132-39-8	WO 9619998	Osteoporosis treatment	Osteoporosis
olsalazine	Benzoic acid, 3,3'-azobis[6-hydroxy- [CAS]	15722-48-2 53200-51-4	US 4559330	GI inflammatory/bowel disorders	Colitis, ulcerative
oltipraz	3H-1,2-Dithiole-3-thione, 4-methyl-5-pyrazinyl- [CAS]	64224-21-1	DE 2705641	Anticancer, other	Cancer, general

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OM-294DP	2-[3(R)-(Dodecanoyloxy)tetradecanamido]-N-[4-[3(R)-hydroxytetradecanamido]-5-(phosphonoxy)pentyl]-4-(phosphonoxy)butyramide			Anticancer, immunological	Unspecified
Omacor	ethyl (5Z,8Z,11Z,14Z,17Z)-eicosa-5,8,11,14,17-pentaenoate + ethyl (4Z,7Z,10Z,13Z,16Z,19Z)-docosa-4,7,10,13,16,19-hexaenoate	81926-94-5 86227-47-6		Hypolipemic/Antiatherosclerosis	Hypertriglyceridaemia
omapatrilat	7H-Pyrido(2,1-b)(1,3)thiazepine-7-carboxylic acid, octahydro-4-((2-mercapto-1-oxo-3-phenylpropyl)amino)-5-oxo, (4S-(4Alpha(R*),7Alpha,10aB))- [CAS]	167305-00-2	US 5508272	Antihypertensive, renin system	Hypertension, general
omeprazole	1H-Benzimidazole, 5-methoxy-2-[[[4-methoxy-3,5-dimethyl-2-pyridinyl)methyl]sulfinyl]- [CAS]	73590-58-6	US 4255431	Antilulcer	Ulcer, GI, general
omiloxetine	Ethanone, 2-[(3R,4S)-3-[(1,3-benzodioxol-5-yloxy)methyl]-4-(4-fluorophenyl)-1-piperidinyl]-1-(4-fluorophenyl)-, rel- [CAS]	176894-09-0		Antidepressant	Depression, general
omoconazole	1H-Imidazole, 1-[2-[2-(4-chlorophenoxy)ethoxy]-2-(2,4-dichlorophenyl)-1-methylethenyl]-, (Z)- [CAS]	74512-12-2	EP 8804	Antifungal	Infection, dermatological
<b>Onapristone</b>		96346-61-1			
ondansetron	4H-Carbazol-4-one, 1,2,3,9-tetrahydro-9-methyl-3-[(2-methyl-1H-imidazol-1-yl)methyl]- [CAS]	99614-01-4 99614-02-5	US 4847281	Antiemetic	Chemotherapy-induced nausea and vomiting
ONO-3403	Benzoic acid, 4-[(1E)-3-[(2-ethoxy-2-oxoethyl)-2-propenylamino]-2-methyl-3-oxo-1-propenyl]-, 4-(aminoininomethyl)phenyl ester, monomethanesulfonate [CAS]	181586-07-2		GI inflammatory/bowel disorders	Unspecified

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ONO-4128	1,4,9-Triazaspiro(5.5)undecane-2,5-dione, 1-butyl-3-(cyclohexylmethyl)-9-((2,3-dihydro-1,4-benzodioxin-6-yl)methyl)- [CAS]	342394-93-8		Antiviral, anti-HIV	Infection, HIV/AIDS
ONO-8815 Ly	L-lysine (Z)-7-[(1R,2R,3R,5R)-5-chloro-3-hydroxy-2-[(E)-(S)-4-(1-ethylcyclobutyl)-4-hydroxy-1-butenyl]cyclopentyl]-5-heptenoate				
ONT-093			US 5756527	Labour inhibitor	Labour, preterm
OPC-14523	2(1H)-Quinolinone, 1-[3-[4-(3-chlorophenyl)-1-piperazinyl]propyl]-3,4-dihydro-5-methoxy- [CAS]	145969-30-8	EP 512525	Radio/chemosensitizer	Cancer, general
OPC-31260	Benzamide, N-[4-[[5-(dimethylamino)-2,3,4,5-tetrahydro-1H-1-benzazepin-1-yl]carbonyl]phenyl]-2-methyl-	137975-06-5	WO 9105549	Antidepressant	Depression, general
OPC-51803	(5R)-2-[1-(2-chloro-4-(1-pyridinyl)benzoyl)-2,3,4,5-tetrahydro-1H-1-benzazepin-5-yl]-N-isopropylacetamide			Urological	Unspecified
OPC-6535	2-Pyridinecarboxylic acid, 6-[2-(3,4-diethoxyphenyl)-4-thiazolyl]- [CAS]	145739-56-6	WO 9209586	Antidiabetic	Diabetes, insipidus
Opiniazide		2779-55-7		GI inflammatory/bowel disorders	Inflammatory bowel disease
opioid analgesics	2-(4-trifluoromethylphenyl)-N-methyl-1-phenyl-2-(1-pyridinyl)ethylacetamide				
Opipramol		315-72-0		Analgesic, other	Pain, general
Orazamide		2574-78-9			
orazipone	2,4-Pentanedione, 3-((4-methylsulfonyl)phenyl)methylene)- [CAS]	137109-78-5	EP 440324	Antialsthma	Unspecified
Org-12962	Piperazine, 1-[6-chloro-5-(trifluoromethyl)-2-pyridinyl]-, monohydrochloride [CAS]	210821-63-9		Antidepressant	Depression, general
Org-24448			US 6166008	Neuroleptic	Schizophrenia

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oritavancin	Vancomycin, 22-O-(3-amino-2,3,6-trideoxy-3-C-methyl-Alpha-L-arabino-hexopyranosyl)-N3"-[(4'-chloro[1,1'-biphenyl]-4-yl)methyl]-, (4"R)- [CAS]	171099-57-3	US 5840684	Peptide antibiotic	Infection, dermatological
orlistat	L-Leucine, N-formyl-, 1-[(3-hexyl-4-oxo-2-oxetanyl)methyl]dodecyl ester, [2S-[2Alpha(R'),3beta]]- [CAS]	96829-58-2	EP 129748	Anorectic/Antiobesity	Obesity
ormeloxifene	Pyrrolidine, 1-[2-(p-(7-methoxy-2,2-dimethyl-3-phenyl-4-chromanyl)phenoxy)ethyl]-, trans- [CAS]	31477-60-8	DE 2329201	Female contraceptive	Contraceptive, female
Ornidazole		16773-42-5			
Ornipressin		3397-23-7			
Ornithine		70-26-8			
omoprostil	Prost-13-en-1-oic acid, 11,15-dihydroxy-17,20-dimethyl-6,9-dioxo-, methyl ester, (11Alpha,13E,15S,17S)- [CAS]	70667-26-4	US 4278688	Prostaglandin	Ulcer, gastric
Orotic Acid		65-86-1			
Orphenadrine		83-98-7			
Orthocaine		536-25-4			
Osalmid		526-18-1			
osanetant	Acetamide, N-[1-[3-[(3R)-1-benzoyl-3-(3,4-dichlorophenyl)-3-piperidinyl]propyl]-4-phenyl-4-piperidinyl]-N-methyl- [CAS]	160492-56-8	EP 673928	Neuroleptic	Schizophrenia
osaterone	2-Oxapregna-4,6-diene-3,20-dione, 17-(acetyloxy)-6-chloro- [CAS]	105149-00-6	EP 193871	Prostate disorders	Benign prostatic hyperplasia
oseltamivir	1-Cyclohexene-1-carboxylic acid, 4-(acetylamino)5-amino-3-(1-ethylpropoxy)-, ethyl ester, (3R-(3Alpha,(4beta,5Alpha))-[CAS]	196618-13-0	WO 9626933	Antiviral, other	Infection, influenza virus
OSI-7836	4'-Thio-beta-D-arabinofuranosylcytosine			Anticancer, antimetabolite	Cancer, general

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OSI-7904	Pentanedioic acid, 2-[5-[[[1,2-dihydro-3-methyl-1-oxobenzol[f]quinazolin-9-yl)methyl]amino]-1,3-dihydro-1-oxo-2H-isoindol-2-yl]-, (S)- [CAS]	139987-54-5	WO 9119700	Formulation, optimized, liposomes	Cancer, general
ospemifene	Ethanol, 2-[4-[[12]-4-chloro-1,2-diphenyl-1-butenyl]phenoxy]- [CAS]	128607-22-7	WO 9607402	Menopausal disorders	Osteoporosis
otilonium bromide	Ethanaminium, N,N-diethyl-N-methyl-2-[[4-[[2-(octyloxy)benzoyl]amino]benzoyl]oxy]-, bromide [CAS]	26095-59-0	GB 1181406	Antispasmodic	Irritable bowel syndrome
Ouabain		630-60-4			
Oxaceprol		33996-33-7			
Oxacillin		66-79-5			
Oxaflozane		26629-87-8			
oxaliplatin	Platinum, (1,2-cyclohexanediamine-N,N')[ethanedioato(2-)-O,O']-, [SP-4-2-(1R-trans)]- [CAS]	61825-94-3	EP 393575	Anticancer, alkylating	Cancer, colorectal
Oxalyt-C	1,2,3-Propanetricarboxylic acid, 2-hydroxy-, potassium sodium salt [CAS]	28060-67-5	DE 2249274	Urological	
Oxamarin		15301-80-1			
Oxametacine		27035-30-9			
Oxamniquine		21738-42-1			
oxandrolone	2-Oxaandrostane-3-one, 17-hydroxy-17-methyl-, (5 $\alpha$ ), (17 $\beta$ )- [CAS]	53-39-4	US 3128283	Reproductive/gonadal, general	Sex-chromosome abnormality, Turner's syndrome
Oxantel		36531-26-7			
Oxapropanium		541-66-2			
oxaprozin	2-Oxazolepropanoic acid, 4,5-diphenyl- [CAS]	21256-18-8	GB 1206403	Antiarthritic, other	Arthritis, osteo
oxatamide	2H-Benzimidazol-2-one, 1-[3-[4-(diphenylmethyl)-1-piperazinyl]propyl]-1,3-dihydro- [CAS]	60607-34-3	GB 1579365	Antiallergic, non-asthma	Rhinitis, allergic, general
oxazepam	7-Chloro-1,3-dihydro-3-hydroxy-5-phenyl-2H-1,4-benzodiazepin-2-one	604-75-1		Formulation, oral, orally-disintegrating	Anxiety, general



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oxazolam	Oxazolo[3,2-d][1,4]benzodiazepin-6(5H)-one, 10-chloro-2,3,7,11b-tetrahydro-2-methyl-11b-phenyl- [CAS]	27167-30-2	US 3772371	Anxiolytic	
oxcarbazepine	5H-Dibenz[b,f]azepine-5-carboxamide, 10,11-dihydro-10-oxo- [CAS]	28721-07-5 29331-92-8	DE 2011087	Antiepileptic	Epilepsy, general
Oxeladin		468-61-1			
Oxendolone		33765-68-3			
Oxethazaine		126-27-2			
Oxetorone		26020-55-3			
oxiconazole	Ethanone, 1-(2,4-dichlorophenyl)-2-(1H-imidazol-1-yl)-, O-[(2,4-dichlorophenyl)methyl]oxime, (Z)- [CAS]	64211-45-6	GB 1514870	Antifungal	Infection, fungal, general
Oxidronic Acid		15468-10-7			
Oxiniacic Acid		2398-81-4			
Oxiracetam		62613-82-5			
oxitropium	3-Oxa-9-azoniatricyclo[3.3.1.0 <sup>2,4</sup> ]nonane, 9-ethyl-7-(3-hydroxy-1-oxo-2-phenylpropoxy)-9-methyl-, bromide, [7(S)-(1 $\alpha$ ,2 $\beta$ ,4 $\beta$ ,5 $\alpha$ )-7 $\beta$ ]- [CAS]	30286-75-0	GB 1178305	Antiasthma	
Oxolamine		959-14-8			
Oxolinic Acid		14698-29-4			
Oxophenarsine		538-03-4			
Oxprenolol		6452-71-7			
Oxybenzone		131-57-7			
oxybutynin	Benzeneacetic acid, Alpha-cyclohexyl-Alpha-hydroxy-, 4-(diethylamino)-2-butynyl ester- [CAS]	5633-20-5		Formulation, modified-release, other	Incontinence
Oxycinchophen		485-89-2			
oxycodone	Morphinan-6-one, 4,5-epoxy-14-hydroxy-3-methoxy-17-methyl-, (5 $\alpha$ )-	76-42-6		Formulation, transmucosal, nasal	Pain, general

Table IV

API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Oxyfedrine		15687-41-9			
Oxygent	Octane, 1-bromo-1,1,2,3,3,4,4,5,5,6,6,7,7,8,8,8-heptadecafluoro- [CAS]	423-55-2		Haematological	Surgery adjunct
Oxymesterone		145-12-0			
Oxymetazoline		1491-59-4			
oxymetholone	Androstan-3-one, 17-hydroxy-2-(hydroxymethylene)-17-methyl-, (5 $\alpha$ ), 17 $\beta$ )- [CAS]	434-07-1		Hormone	Anaemia, general
Oxymethurea		140-95-4			
oxymorphone	(5 $\alpha$ )-(4,5-Epoxy-3,14-dihydroxy-17-methylmorphinan-6-one [CAS]	76-41-5		Formulation, modified-release, immediate	Pain, general
Oxypendyl		5585-93-3			
Oxypertine		153-87-7			
Oxyphenbutazone		129-20-4			
Oxyphencyclimine		125-53-1			
Oxyphenisatin		115-33-3			
Oxyphenonium		50-10-2			
Oxypinocamphone		10136-65-9			
oxypurinol	1H-Pyrazolo[3,4-d]pyrimidine-4,6(5H,7H)-dione [CAS]	2465-59-0		Antigout	Hyperuricaemia
Oxytetracycline		79-57-2			
ozagrel	2-Propenoic acid, 3-[4-(1H-imidazol-1-ylmethyl)phenyl]-, (E)- [CAS]	78712-43-3 82571-53-7	GB 2025946	Antithrombotic	Vasospasm, cerebral
p-(Benzy)sulfonamido)benzoic Acid		536-95-8			
P-100			US 6313177	Antiviral, anti-HIV	Infection, HIV/AIDS
P-1202	Pentanoic acid, 5-amino-4-oxo, methyl ester, hydrochloride [CAS]	79416-27-6	US 6034267	Dermatological	Keratosis
P32/98	Di-(3N-[(2S,3S)-2-amino-3-methylpentanoyl]-1,3-thiazolidine)fumarate			Antidiabetic	Diabetes, Type II
PA-824			WO 9701562	Antimycobacterial	Infection, tuberculosis

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
PACAP 38	Pituitary adenylate cyclase-activating peptide-38 [CAS]	128606-20-2	US 5128242	Neuroprotective	Nerve injury, general
paclitaxel	5 $\beta$ ,20-Epoxy-1,2Alpha,4,7 $\beta$ ,10 $\beta$ ,13Alpha-hexahydroxytax-11-en-9-one-4,10-diacetate-2-benzoate-13-(Alpha-phenylhippurate)	33069-62-4		Formulation, optimized, nanoparticles	Cancer, breast
PADRE	1H-isoindol-1-one, 2-(7-chloro-1,8-naphthyridin-2-yl)-2,3-dihydro-3-(5-methyl-2-oxohexyl)- (R)- [CAS]		US 6413935	Immunostimulant, other	Vaccine adjunct
pagoclone		133737-32-3	US 4960779	Anxiolytic	Panic disorder
PAI inhbs			WO 9404512	Antithrombotic	Thrombosis, venous
palindore	8H-1,4-dioxino[2,3-e]indol-8-one,2,3,7,9-tetrahydro-2-[(phenylmethyl)amino]methyl-, 2(S)-, (2E)-2-butendioate (1:1)	189681-71-8		Neuroleptic	Schizophrenia
Palivizumab		188039-54-5			
palonosetron	3aS-2-[(S)-1-Azabicyclo[2.2.2]oct-3-yl]-2,3,3a,4,5,6-hexahydro-1-oxo-1H-benz[de]isoquinoline hydrochloride	135729-62-3	US 5202333	Antiemetic	Chemotherapy-induced nausea and vomiting
Pamabrom		606-04-2			
Pamaquine		491-92-9			
pamicrogel	1H-Pyrrole-1-acetic acid, 2-[4,5-bis(4-methoxyphenyl)-2-thiazolyl]-, ethyl ester [CAS]	101001-34-7	EP 159677	Antithrombotic	Thrombosis, cerebral
pamidronate	(3-Amino-1-hydroxypropylidene)diphosphonic acid- [CAS]	40391-99-9		Formulation, implant	Hypercalcaemia of malignancy
p-Aminobenzoic Acid		150-13-0			
p-Aminohippuric Acid		61-78-9			
p-Aminopropiophenone		70-69-9			
p-Aminosalicylic Acid		65-49-6			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Panavir	4,4'-isopropylidenedithiobis-2,6-di- t-butylphenol			Neuroprotective	Vasospasm, cerebral
Pancuronium		15500-66-0			
Panipenem		87726-17-8			
Pantethine		16816-67-4			
pantoprazole	1H-Benzimidazole, 5-(difluoromethoxy)-2- [[[(3,4-dimethoxy-2-pyridinyl)methyl]sulfinyl] [CAS]	102625-70-7	EP 166287	Antiulcer	Ulcer, duodenal
Pantothenic Acid		79-83-4			
Papain					
Papaverine		58-74-2			
paracetamol	Acetamide, N-(4-hydroxyphenyl)- [CAS]	103-90-2		Formulation, oral, other, modified- release	Pain, general
Paraflutizide		1580-83-2			
Paraldehyde		123-63-7			
Paramethadione		115-67-3			
Paramethasone		53-33-8			
Paranyline		1729-61-9			
Parathyroid Hormone		9002-64-6			
parecoxib	Propanamide, N-((4-(5-methyl-3-phenyl-4- isoxazolyl)phenyl)sulfonyl)-, sodium salt [CAS]	198470-85-8	WO 9738986	Analgesic, NSAID	Pain, post-operative
Parethoxycaine		94-23-5			
Pargyline		555-57-7			
paricalcitol	19-Nor-9,10-secoergosta-5,7,22-triene- 1,3,25-triol, (1 $\alpha$ ,3 $\beta$ ,7E,22E)- [CAS]	131918-61-1	EP 387077	Hormone	Hyperparathyroidism
paromomycin	O-2-Amino-2-deoxy-Alpha-D- glucopyranosyl-(1-4)-O-[O-2,6-diamino-2,6- dideoxy- $\beta$ -L-idopyranosyl-(1-3)- $\beta$ -D- ribofuranosyl-(1-5)]-2-deoxy-D-streptamine	7542-37-2		Protozoacide	Infection, leishmaniasis
paroxetine	Piperidine, 3-[[1,3-benzodioxol-5- yloxy)methyl]-4-(4-fluorophenyl)-, (3S- trans)- [CAS]	61869-08-7	EP 223403	Antidepressant, formulation, oral, orally- disintegrating	Depression, general

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Paroxypropione		70-70-2			
Parsalimide		30653-83-9			
PaTrin-2	4-Bromothienylguanine			Radio/chemosensitizer	Cancer, melanoma
Pazinacloane		103255-66-9			
pazufloxacin	7H-Pyrido[1,2,3-de]-1,4-benzoxazine-6-carboxylic acid, 10-(1-aminocyclopropyl)-9-fluoro-2,3-dihydro-3-methyl-7-oxo-, (S)-[CAS]	127045-41-4 127046-45-1 136905-87-8	DE 3913245	Quinolone antibacterial	Infection, general
p-Bromoacetanilide		103-88-8			
PC-NSAIDs			US 4918063	Formulation, other	Arthritis, general
PD-0166285	6-(2,6-Dichlorophenyl)-2-[4-(diethylaminoethoxy)-phenylamino]-8-pyrido[2,3-D]pyrimidine-7-one			Anticancer, other	Cancer, general
Pecilocin		19504-77-9			
pefloxacin	3-Quinolincarboxylic acid, 1-ethyl-6-fluoro-1,4-dihydro-7-(4-methyl-1-piperazinyl)-4-oxo- [CAS]	70458-92-3	GB 1598915	Quinolone antibacterial	Infection, urinary tract
pegvisomant	Somatotropin (18-aspartic acid, 21-asparagine, 120-lysine, 167-asparagine, 168-alanine, 171-serine, 172-arginine, 174-serine, 179-threonine (human), pegylated [CAS]	218620-50-9		Somatostatin	Acromegaly
Pelletierine		4396-1-4			
pemetrexed	L-Glutamic acid, N-[4-[2-(2-amino-4,7-dihydro-4-oxo-1H-pyrrolo[2,3-d]pyrimidin-5-yl)ethyl]benzoyl]-, disodium salt [CAS]	137281-23-3 150399-23-8	US 5248775	Anticancer, antimetabolite	Cancer, mesothelioma
pemirolast	4H-Pyrido[1,2-a]pyrimidin-4-one, 9-methyl-3-(1H-tetrazol-5-yl)- [CAS]	100299-08-9 69372-19-6	US 4457932	Antiasthma	Asthma
Pemoline		2152-34-3			
Pempidine		79-55-0			
PEN-203			US 5955446	Antiviral, other	Infection, human papilloma virus
Penamecillin		983-85-7			

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penbutolol	2-Propanol, 1-(2-cyclopentylphenoxy)-3- [(1,1-dimethylethyl)amino]-, (S)-, sulfate (2:1) (salt) [CAS]	38363-32-5 38363-40-5	GB 1215751	Antihypertensive, adrenergic	
peniclovir	6H-Purin-6-one, 2-amino-1,9-dihydro-9-[4- hydroxy-3-(hydroxymethyl)butyl]- [CAS]	39809-25-1	JP 60058982	Antiviral, other	Infection, herpes simplex virus
Penethamate		808-71-9			
penfluridol	4-Piperidino, 1-[4,4-bis(4- fluorophenyl)butyl]-4-[4-chloro-3- (trifluoromethyl)phenyl]- [CAS]	26864-56-2	DE 2040231	Neuroleptic	
Penicillamine		52-67-5			
Penicillin G		61-33-6			
Penicillin G Benzathine		1538-09-6			
Penicillin G Procaine		6130-64-9			
Penicillin N		525-94-0			
Penicillin O		87-09-2			
Penicillin V		87-08-1			
Penimepicycline		4599-60-4			
Penntuss			US 4221778	Formulation, modified-release, other	Rhinitis, allergic, general
Pentaerythritol Chloral		78-12-6			
Pentaerythritol		2209-86-1			
Dichlorohydrin					
Pentaerythritol		597-71-7			
Pentagastrin		5534-95-2			
Pentagestrone		7001-56-1			
Pentalyte	Starch, 2-hydroxyethyl ether [CAS]	9005-27-0	US 5407428	Plasma substitute	Surgery adjunct
Pentamethonium		541-20-8			
pentamidine	Benzenecarboximidamide, 4,4'-[1,5- pentanediy]bis(oxy)]bis- [CAS]	100-33-4		Formulation, inhalable, systemic	Infection, Pneumocystis jiroveci prophylaxis
Pentazocine		359-83-1			
Pentetate		12111-24-9			
Pentetic Acid		67-43-6			
Pentetreotide		138661-02-6			



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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Penthienate		60-44-6			
Pentifylline		1028-33-7			
Pentigetide		62087-72-3			
Pentisomide		78833-03-1			
Pentobarbital		76-74-4			
Pentolinium		52-62-0			
Pentorex		434-43-5			
pentosan	Xylan, [CAS]	37319-17-8	US 5180715	Urological	Inflammation, urinary tract
pentostatin	imidazo[4,5-d][1,3]diazepin-8-ol, 3-(2-deoxy-β-D-erythro-pentofuranosyl)-3,6,7,8-tetrahydro-, (R)- [CAS]	53910-25-1	US 3923785	Anticancer, antimetabolite	Cancer, leukaemia, hairy cell
pentoxifylline	1H-Purine-2,6-dione, 3,7-dihydro-3,7-dimethyl-1-(5-oxohexyl)- [CAS]			Neuroprotective	Amyotrophic lateral sclerosis
Pentoxyl		147-61-5			
Pentritinol		1607-17-6			
Pentylene tetrazole		54-95-5			
peplomycin	Bleomycinamide, N1-[3-[[1-phenylethyl]amino]propyl]-, (S)- [CAS]	68247-85-8	US 4195018	Anticancer, antibiotic	
Perazine		84-97-9			
Perflubron		423-55-2			
Perfosamide		62435-42-1; 39800-16-3 (unspecified)			
pergolide	Ergoline, 8-[(methylthio)methyl]-6-propyl-, (8S)-, monomethanesulfonate- [CAS]	66104-22-1 66104-23-2	US 4797405	Antiparkinsonian	Parkinson's disease
Perhexiline		6621-47-2			
Pericyazine		2622-26-6			
perfosine	Piperidinium, 4-[[[hydroxy(octadecyloxy)phosphinyloxy]-1,1-dimethyl-, inner salt [CAS]	157716-52-4	EP 594999	Anticancer, other	Cancer, prostate
perillyl alcohol	1-Cyclohexene-1-methanol, 4-(1-methylethenyl)- [CAS]	536-59-4	US 5110832	Anticancer, other	Cancer, breast
Perimethazine		13093-88-4			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
perindopril	1H-Indole-2-carboxylic acid, 1-[2-[[1-(ethoxycarbonyl)butyl]amino]-1-oxopropyl]octahydro-, [2S-[1[R*(R*)], 2Alpha, 3aß, 7aß]]-, compd. with 2-methyl-2-propanamine (1:1) [CAS]	107133-36-8 82834-16-0 95153-31-4	EP 49658	Antihypertensive, renin system	Hypertension, general
Periodyl		53586-99-5			
perisoxal	1-Piperidineethanol, Alpha-(5-phenyl-3-isoxazolyl)-, 2-hydroxy-1,2,3-propanetricarboxylate (2:1) (salt) [CAS]	2139-25-5 2055-44-9	JP 04217925	Anti-inflammatory	
Perlapipe		1977-11-3			
Permethrin		52645-53-1			
perospirone	1H-Indole-1,3(2H)-dione, 2-[4-[4-(1,2-benzisothiazol-3-yl)-1-piperazinyl]butyl]hexahydro-, cis- [CAS]	129273-38-7 150915-41-6	CA 2167004	Neuroleptic	Schizophrenia
Perphenazine		58-39-9			
Petroleum Benzin		8030-30-6			
PH-10			US 6331286	Antipsoriasis	Psoriasis
Phanquinone		84-12-8			
Pharmaprojects No. 4994			WO 9638482	Immunological	Unspecified
Pharmaprojects No. 5325			WO 9703986	Neuroleptic	Schizophrenia
Pharmaprojects No. 5972			WO 0204426	Antiasthma	Asthma
Pharmaprojects No. 6362			US 6057346	Antiviral, anti-HIV	Infection, HIV/AIDS
Pharmaprojects No. 6446	(R)-N-[4-[2-[2-Hydroxy-2-(3-pyridinyl)ethyl]amino]ethyl]phenyl]-4-[4-(trifluoromethyl)phenyl]thiazol-2-yl]benzenesulfonamide			Anorectic/Antiobesity	Obesity
Pharmaprojects No. 6590			WO 0206223	Psychostimulant	Attention deficit disorder
Pharmaprojects No. 6656			US 6455026	Genomics-based drug discovery	Cancer, brain
Pharmaprojects No. 6691			US 6299900	Formulation, other	Pain, general
Pharmaprojects No. 6743	3-(6-Aminopyridin-3-yl)-N-methyl-N-((1-methyl-1H-indol-2-yl)methyl)acrylamide			Antibacterial, other	Infection, general

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Pharmaprojects No. 6748	1,2,3,4,10,14b-Hexahydro-6-methoxy-2-methylidibenzo[c, f]pyrazino[1,2-a]azepin			Antidepressant	Depression, general
Phenacaine		620-99-5			
Phenacemide		63-98-9			
Phenacetin		62-44-2			
Phenadoxone		467-84-5			
Phenallymal		115-43-5			
Phenamet		3819-34-9			
Phenazocine		127-35-5			
Phenazopyridine		136-40-3			
Phenbutamide		3149-00-6			
Phencyclidine		77-10-1			
Phendimetrazine		634-03-7			
Phenelzine		51-71-8			
Phenesterine		3546-10-9			
Phenetharbital		357-67-5			
Phenethicillin		132-93-4			
Pheneturide		90-49-3			
Phenformin		114-86-3			
Phenylglutarimide		1156-05-4			
Phenindamine		82-88-2			
Phenindione		83-12-5			
Pheniprazine		55-52-7			
Pheniramine		86-21-5			
Phenmetrazine		134-49-6			
Phenobarbital		50-06-6			
Phenobutiodil		554-24-5			
Phenocoll		103-97-9			
Phenoctide		78-05-7			
Phenolphthalein		77-09-8			
Phenolphthalol		81-92-5			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Phenolsulfonphthalein		143-74-8			
Phenoltetrachlorophthal		639-44-1			
ein					
Phenoperidine		562-26-5			
Phenosulfazole		515-54-8			
Phenoxybenzamine		59-96-1			
Phenoxypropazine		3818-37-9			
Phenprobamate		673-31-4			
Phenprocoumon		435-97-2			
phenserine	Pyrrolo(2,3-b)indol-5-ol, 1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethyl-, phenylcarbamate (ester), (3aS-cis)- [CAS]	101246-66-6		Cognition enhancer	Alzheimer's disease
Phensuximide		86-34-0			
Phentermine		122-09-8			
Phentetiothalein		18265-54-8			
phentolamine	Phenol, 3-(((4,5-dihydro-1H-imidazol-2-yl)methyl)(4-methylphenyl)amino)-, monomethanesulfonate (salt) [CAS]	65-28-1 50-60-2		Formulation, oral, other	Impotence
Phenyl Acetylsalicylate		134-55-4			
Phenyl Aminosalicylate		133-11-9			
Phenyl Salicylate		118-55-8			
Phenylbutazone		50-33-9			
Phenylephrine		61-76-7			
Phenylethanamine		7568-93-6			
Phenylmercury		102-98-7			
Phenylmethylbarbituric Acid		76-94-8			
phenylpropanolamine	Benzenemethanol, Alpha-(1-aminoethyl)-, (R*,S*)-(+/-)- [CAS]	14838-15-4		Anorectic/Antiobesity, formulation, optimized, microparticles	
Phenylpropylmethylaniline		93-88-9			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Phenyltoloxamine		92-12-6			
Phenylramidol		553-69-5			
phenytoin	2,4-Imidazolidinedione, 5,5-diphenyl- [CAS]	57-41-0		Formulation, oral, other	Epilepsy, general
Phethenylate		510-34-9			
Phloroglucinol		108-73-6			
Pholcodine		509-67-1			
Pholedrine		370-14-9			
Phosphocreatine		67-07-2			
Phosphocysteamine		5746-40-7			
Phosphorylcholine		107-73-3			
Phthalylsulfacetamide		131-69-1			
Phthalylsulfathiazole		85-73-4			
p-Hydroxyephedrine		365-26-4			
Phylloquinone		84-80-0			
Physostigmine		57-47-6			
Phytic Acid		83-86-3			
	D-Mannose, O-6-O-phosphono-Alpha-D-mannopyranosyl-(1-3)-O-Alpha-D-mannopyranosyl-(1-3)-O-Alpha-D-mannopyranosyl-(1-3)-O-Alpha-D-mannopyranosyl-(1-2)-hydrogen sulphate [CAS]	185077-23-0		Anticancer, other	Cancer, melanoma
PI-88		39640-15-8			
Piberaline		152811-62-6	WO 9318036	Antiarrhythmic	Fibrillation, atrial
piboserod	2H-(1,3)Oxazino(3,2-a)indole-10-carboxamide, N-((1-butyl-4-piperidyl)methyl)-3,4-dihydro- [CAS]	62510-56-9			
Picilorex		5636-92-0			
Picloxydine		21755-66-8			
Picoperine		10040-45-6			
Picosulfate		32828-81-2			
Picotamide		39577-19-0			
Picumast					

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
pidotimod	4-Thiazolidinecarboxylic acid, 3-[(5-oxo-2-pyrrolidinyl)carbonyl]- [CAS]	121808-62-6	EP 276752	Immunomodulator, anti-infective	Infection, respiratory tract, lower
<b>Pifarnine</b>		56208-01-6			
piketopufen	Benzeneacetamide, 3-benzoyl-Alpha-methyl-N-(4-methyl-2-pyridinyl)- [CAS]	60576-13-8	GB 1436502	Anti-inflammatory, topical	
<b>Pildralazine</b>		64000-73-3			
pilocarpine	2(3H)-Furanone, 3-ethylidihydro-4-[(1-methyl-1H-imidazol-5-yl)methyl]-, (3S-cis)- [CAS]	92-13-7		Formulation, implant, Stomatological	
	2-Propenoic acid, 2-methyl-, dodecyl ester, polymer with 2-propenoic acid, compd. with (3S-cis)-3-ethylidihydro-4-[(1-methyl-1H-imidazol-5-yl)methyl]-2(3H)-furanone [CAS]	62783-28-2	DE 2636559	Formulation, mucosal, topical	Glaucoma
Piloplex	1H-Pyrrolizine-7a(5H)-acetamide, N-(2,6-dimethylphenyl)tetrahydro-, monohydrochloride [CAS]	88069-49-2 88069-67-4	US 4564624	Antiarrhythmic	Arrhythmia, general
<b>Pimeclone</b>		534-84-9			
	15,19-Epoxy-3H-pyrido(2,1-c)(1,4)oxazacyclotricosine-1,7,20,21(4H,23H)-tetrone, 3-(2-(4-chloro-3-methoxycyclohexyl)-1-methylethenyl)-8-ethyl-5,6,8,11,12,13,14,15,16,17,18,19,24,25,26,26a-hexadecahydro-5,19-dihydroxy-14,16-dimethoxy-4,10,12,18-tetramethyl-(3S-(3R*E(1S*,3S*,4R*)), 4S*,5R*,8S*,9E*,12R*,14R*,5S*,16R*,18S,8,19S*,26aR*)))- [CAS]	137071-32-0	EP 626385	Antipruritic/inflamm, allergic	Eczema, atopic
<b>Pimefylline</b>		10001-43-1			
	Acetic acid, [2-[octahydro-5-hydroxy-6-(3-hydroxy-5-methyl-1-nonanyl)-2-pentalenyl]ethoxy]-, methyl ester, [2R-[2Alpha,3Alpha,4Alpha(1E,3S*,5S*),5beta,6aAlpha]]- [CAS]	139403-31-9		Dermatological	Ulcer, general
pimilprost		13495-09-5			
<b>Piminodine</b>		74150-27-9			
<b>Pimobendan</b>					



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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
pimozide	2H-Benzimidazol-2-one, 1-[1-[4,4-bis(4-fluorophenyl)butyl]-4-piperidinyl]-1,3-dihydro- [CAS]	2062-78-4	FR M3695	Neuroleptic	
<b>Pinacidil</b>		85371-64-8			
	Morpholinium, 4-[(2-bromo-4,5-dimethoxyphenyl)methyl]-4-[2-(6,6-dimethylbicyclo[3.1.1]hept-2-yl)ethoxy]ethyl]-, [CAS]	53251-94-8 59995-65-2	EP 406743	Antispasmodic	Irritable bowel syndrome
pinaverium					
pinazepam	2H-1,4-Benzodiazepin-2-one, 7-chloro-1,3-dihydro-5-phenyl-1-(2-propynyl)-[CAS]	52463-83-9	DE 2339790	Anxiolytic	
<b>Pindolol</b>		13523-86-9			
	2,4-Thiazolidinedione, 5-[[4-[2-(5-ethyl-2-pyridiny)ethoxy]phenyl]methyl]-, monohydrochloride (+/-)- [CAS]	111025-46-8 112529-15-4	EP 193256	Antidiabetic	Diabetes, Type II
pioglitazone		1110-80-1			
<b>Pipacycline</b>		84-04-8			
<b>Pipamazine</b>		1893-33-0			
<b>Pipamperone</b>		2167-85-3			
<b>Pipazethate</b>		27315-91-9			
<b>Pipebuzone</b>		52212-02-9			
<b>Pipecurium</b>					
	Piperazinium, 4,4'-[[2β,3Alpha,5Alpha,16β,17β)-3,17-bis(acetyloxy)androstane-2,16-diyl]bis[1,1]-dimethyl-, [CAS]	52212-02-9 68399-57-5	GB 1398050	Muscle relaxant	Anaesthesia, adjunct
pipecuronium					
	Pyrido[2,3-d]pyrimidine-6-carboxylic acid, 8-ethyl-5,8-dihydro-5-oxo-2-(1-piperazinyl)- [CAS]	51940-44-4	GB 1451911	Antibacterial, other	Infection, urinary tract
pipemidic acid		125-51-9			
<b>Pipenzolate Bromide</b>		3819-00-9			
<b>Piperacetazine</b>					
	4-Thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid, 6-[[[(4-ethyl-2,3-dioxo-1-piperazinyl)carbonyl]amino]phenylacetyl]amino]-3,3-dimethyl-7-oxo-, [2S-[2Alpha,5Alpha,6β(S*)]]- [CAS]	59703-84-3 61477-96-1	GB 1508062	Penicillin, injectable	Infection, general
piperacillin					

Table IV

API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Piperazine Adipate		142-88-1			
Piperidione		77-03-2			
Piperidolate		82-98-4			
Piperillate		4546-39-8			
piperine analogues			WO 002544	Dermatological	Vitiligo
Piperocaine		136-82-3			
Piperonal		120-57-0			
Piperoxan		59-39-2			
Piperylone		25 31-4-6			
Pipobroman		54-91-1			
Piposulfan		2608-24-4			
	Hexadecanoic acid, 2-[1-[3-[2-[(dimethylamino)sulfonyl]-10H-phenothiazin-10-yl]propyl]-4-piperidinylethyl ester [CAS]	37517-26-3 39860-99-6	US 4782077	Neuroleptic	
pipotiazine		18174-58-8			
Pipoxolan		467-60-7			
Pipradrol					
piprozolin	Acetic acid, [3-ethyl-4-oxo-5-(1-piperidinyl)-2-thiazolidinylidene]-, ethyl ester [CAS]	17243-64-0	US 3971794	GI inflammatory/bowel disorders	Motility dysfunction, GI, general
Piracetam		7491-74-9			
	5,12-Naphthacenedione, 10-[[3-amino-2,3,6-trideoxy-4-O-(tetrahydro-2H-pyran-2-yl)-Alpha-L-lyxo-hexopyranosyl]oxy]-7,8,9,10-tetrahydro-6,8,11-trihydroxy-8-(hydroxyacetyl)-1-methoxy-, [8S-[8Alpha,10Alpha(S*)]]- [CAS]	72496-41-4	US 4303785	Anticancer, antibiotic	Cancer, breast
pirarubicin		71002-09-0			
Pirazolac		38029-10-6 38677-81-5 65652-44-0			
pirbuterol	2,6-Pyridinedimethanol, Alpha6-[[[(1,1-dimethylethyl)amino]methyl]-3-hydroxy-, monoacetate (salt) [CAS]	1043-21-6	US 3786160	Antilasthma	Asthma
Pirenoxine					

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
pirenzepine	6H-Pyrido[2,3-b][1,4]benzodiazepin-6-one, 5,11-dihydro-11-[(4-methyl-1-piperazinyl)acetyl]- [CAS]	28797-61-7 29868-97-1	FR 1505795	Anticancer	
piretanide	Benzoic acid, 3-(aminosulfonyl)-4-phenoxy-5-(1-pyrrolidinyl)- [CAS]	55837-27-9	US 4010273	Antihypertensive, diuretic	Hypertension, general
pirfenidone	2(1H)-Pyridinone, 5-methyl-1-phenyl- [CAS]	53179-13-8		Respiratory	Fibrosis, pulmonary
piribedil	Pyrimidine, 2-[4-(1,3-benzodioxol-5-ylmethyl)-1-piperazinyl]- [CAS]	3605-01-4	US 3299067	Vasodilator, peripheral	Parkinson's disease
Piridocaine		87-21-8			
Pirifibrate		55285-45-5			
Piritramide		302-41-0			
Piritrexim		72732-56-0			
pirindole	1H-Pyrazino[3,2,1-jk]carbazole, 2,3,3a,4,5,6-hexahydro-8-methyl- [CAS]	16154-78-2 60762-57-4	SU 276060	Antidepressant	Depression, general
pimanol	(2-Pyridinemethanol, Alpha-[3-(2,6-dimethyl-1-piperidinyl)propyl]-.Alpha.phenyl-, cis-(+)- [CAS]	61477-94-9 68252-19-7	US 4112103	Antiarrhythmic	Tachycardia, supraventricular
Piroctone		50650-76-5			
Piroheptine		16378-21-5			
Piromidic Acid		19562-30-2			
piroxicam	2H-1,2-Benzothiazine-3-carboxamide, 4-hydroxy-2-methyl-N-2-pyridinyl-, 1,1-dioxide [CAS]	36322-90-4	US 3862319	Anti-inflammatory	
piroxicam betadex	$\beta$ -Cyclodextrin, compd. with 4-hydroxy-2-methyl-N-2-pyridinyl-2H-1,2-benzothiazine-3-carboxamide 1,1-dioxide- [CAS]	121696-62-6 96684-39-8	EP 153998	Formulation, other	Pain, musculoskeletal
piroxicam cinnamate	2-Propenoic acid, 3-phenyl-, 2-methyl-3-[(2-pyridinylamino)carbonyl]-2H-1,2-benzothiazin-4-yl ester, S,S-dioxide [CAS]	87234-24-0	EP 79639	Antiarthritic, other	Inflammation, general
Pirozadil		54110-25-7			
Pirprofen		31793-07-4			

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pitavastatin	6-Heptenoic acid, 7-[2-cyclopropyl-4-(4-fluorophenyl)-3-quinolinyl]-3,5-dihydroxy-, calcium salt (2:1), [S-[R*,S*-(E)]]- [CAS]	147526-32-7	EP 304063	Hypolipaeic/Antiatherosclerosis	Hyperlipidaemia, general
pivagabine	N-trimethylacetyl-4-aminobutyric acid	69542-93-4		Neurological	Anxiety, general
pivaloyloxymethyl	Butanoic acid, (2,2-dimethyl)-1-oxopropoxy)methyl ester [CAS]	122110-53-6	EP 302349	Anticancer, other	Cancer, lung, non-small cell
<b>Pivalylbenzhydrazine</b>		306-19-4			
<b>Pivampicillin</b>		33817-20-8			
pivampicillin/pivmecillinam		98445-47-7		Penicillin, oral	Infection, general
<b>Pivcefalexin</b>		63836-75-9			
pivmecillinam	4-Thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid, 6-[[[(hexahydro-1H-azepin-1-yl)methylene]amino]-3,3-dimethyl-7-oxo-, (2,2-dimethyl-1-oxopropoxy)methyl ester, [2S-(2Alpha,5Alpha,6S)]- [CAS]	32886-97-8	GB 1293590	Penicillin, oral	Infection, general
pixantrone	Benz[ <i>g</i> ]isoquinoline-5,10-dione, 6,9-bis[(2-aminoethyl)amino]-, (2Z)-2-butenedioate(1:2) [CAS]	144675-97-8	EP 503537	Anticancer, other	Cancer, lymphoma, non-Hodgkin's
pizotifen	4-(9,10-dihydro-4H-benzo[4,5]cyclohepta[1,2-b]thien-4-ylidene)-1-methylpiperidine	15574-96-6	DE 2346747	Antimigraine	
<b>Pizotyline</b>		15574-96-6			
PKI-166	Phenol, 4-(4-(((1R)-1-phenylethyl)amino)-1H-pyrrolo(2,3-d)pyrimidin-6-yl))- [CAS]	187724-61-4		Anticancer, other	Cancer, general
<b>p-Lactophenetide</b>		539-08-2			
<b>Plafibride</b>		63394-05-8			
plasminogen activator	Plasminogen activator [CAS]	105913-11-9	EP 151996	Fibrinolytic	Infarction, myocardial
<b>Plasmocid</b>		551-01-9			
<b>Platonin</b>		3571-88-8			
<b>Plaunotol</b>		64218-02-6			
PLD-118	Cyclopentanecarboxylic acid, 2-amino-4-methylene-, (1R,2S)- [CAS]	198022-65-0	EP 805145	Antifungal	Infection, Candida, general

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PLD-147	(OC-6-43)-Bis(acetato)(1-adamantylamine)ammine-dichloro-platinum (IV)			Anticancer, alkylating	Cancer, general
pleconaril	1,2,4-Oxadiazole, 3-(3,5-dimethyl-4-(3-(3-methyl-5-isoxazolyl)propoxy)phenyl)-5-(trifluoromethyl)- [CAS]	153168-05-9	US 5464848	Antiviral, other	Infection, respiratory tract, general
Plicamycin		18378-89-7			
p-Methyldiphenhydramine		19804-27-4			
PMS-601			WO 0001677	Antiviral, anti-HIV	Infection, HIV/AIDS
Pneumococcal Vaccine, Diphtheria Conjugate					
Pneumococcal Vaccine, Polyvalent					
PNU-288034	N-[[[(5s)-3[4[(1,1-dioxido-4-thiomorpholinyl)3,5-difluorophenyl]-2-oxo-5-oxazolidinyl]methyl]acetamide]			Antibiotic, other	Infection, general
Podophyllotoxin		518-28-5			
polaprezinc	Zinc, bis(N-β-alanyl-L-histidinato-N3,OAlpha)-, (T-4)- [CAS]	107667-60-7	EP 303380	Antilcer	Ulcer, duodenal
Poldine Methylsulfate		545-80-2			
Policresulen		9011-2-3			
Polidexide		9064-92-0			
polidocanol	Polyethylene glycol monododecyl ether	3055-99-0 9002-92-0		Vasoprotective, systemic	Venous insufficiency
Poliovirus Vaccine Inactivated					

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poly-ADPRT inhibitors			WO 9845253	Anticancer, other	Cancer, general
<b>Polyestradiol Phosphate</b>		28014-46-2			
Polyphenon E	Polyphenon E [CAS]	188265-33-0		Antiviral, other	Infection, human papilloma virus
<b>Polythiazide</b>		346-18-9			
porfimer	Photofrin [CAS]	87806-31-3	US 4882234	Anticancer, other	Cancer, lung, non-small cell
<b>Porfiromycin</b>		801-52-5			
posaconazole	D-threo-Pentitol, 2,5-anhydro-1,3,4-trideoxy-2-C-(2,4-difluorophenyl)-4-((4-(4-(1(1S,2S)-1-ethyl-2-hydroxypropyl)-1,5-dihydro-5-oxo-4H-1,2,4-triazol-4-yl)phenyl)-1-piperazinyl)phenoxy)methyl)-1-(1H-1,2,4-triazol-1-yl)- [CAS]	171228-49-2	US 5714490	Antifungal	Infection, fungal, general
<b>Posatirelin</b>		78664-73-0			
potassium chloride	Potassium chloride (KCl) [CAS]	7447-40-7		Formulation, oral, enteric-coated	
<b>Potassium Gluconate</b>		299-27-4			
<b>Potassium</b>		1321-14-8			
<b>Guaiacolsulfonate</b>					
Potassium p-Aminobenzoate		138-84-1			
<b>Potassium</b>		7722-64-7			
<b>Permanganate</b>					
<b>Povidone</b>		9003-39-8			
<b>Povidone-Iodine</b>		25655-41-8			
PP-117	3-Pyridinemethanol, hydrofluoride [CAS]	62756-44-9	DE 2633028	Formulation, oral, other	Unspecified
PR-2699	(-)-(E)-[4-(2,4-dichlorophenyl)-1,3-dithiolan-2-ylidene]-1-imidazolylacetonitrile			Antifungal	Infection, fungal, general



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PR-608	(S)-(-)-1-[4,4-bis(4-fluorophenyl)butyl]-4-(2-hydroxy-3-phenylaminopropyl)piperazine trihydrochloride			Antiparkinsonian	Parkinson's disease
<b>Practolol</b>		6673-35-4			
<b>Praimaline</b>		35080-11-6			
<b>Pralidoxime</b>		51-15-0			
pralnacasan	6H-Pyridazino(1,2-a)(1,2)diazepine-1-carboxamide, N-((2R,3S)-2-ethoxytetrahydro-5-oxo-3-furanyl)octahydro-9-((1-isoquinolinylcarbonyl)amino)-6,10-dioxo-, (1S,9S)- [CAS]	192755-52-5		Antiarthritic, immunological	Arthritis, rheumatoid
pramipexole	2,6-Benzothiazolediamine, 4,5,6,7-tetrahydro-N6-propyl-, (S)- [CAS]	104632-26-0	EP 186087	Antiparkinsonian	Parkinson's disease
pramiracetam	1-Pyrrolidineacetamide, N-[2-bis(1-methylethyl)amino]ethyl]-2-oxo-, monohydrochloride [CAS]	68497-62-1 72869-16-0 75733-50-5	US 4145347	Cognition enhancer	Amnesia
<b>Pramiverin</b>		14334-40-8			
pramlintide	1,2-Dithia-5,8,11,14,17-pentaazacycloicosane, cyclic peptide deriv. [CAS]	151126-32-8	US 5124314	Antidiabetic	Diabetes, Type I
<b>Pramoxine</b>		140-65-8			
pranlipine	3,5-Pyridinedicarboxylic acid, 1,4-dihydro-2,6-dimethyl-4-(3-nitrophenyl)-, methyl 3-phenyl-2-propenyl ester, (E)- [CAS]	99522-79-9	EP 173126	Antihypertensive, other	Hypertension, general
<b>Pranlukast</b>		103177-37-3			
pranoprofen	5R-[1]Benzopyrano[2,3-b]pyridine-7-acetic acid, Alpha-methyl- [CAS]	52549-17-4		Formulation, mucosal, topical	Ocular disorder, general
prasterone	Androst-5-en-17-one, 3-hydroxy-, (3B)- [CAS]	53-43-0		Labour inducer	
prazosin	4(3H)-Cycloheptimidazolone, 5,6,7,8-tetrahydro-2-propyl-3-[[2'-(1H-tetrazol-5-yl)]1,1'-biphenyl]-4-yl]methyl]- [CAS]	153804-05-8	US 5409947	Antihypertensive, renin system	Hypertension, general

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pravastatin	1-Naphthaleneheptanoic acid, 1,2,6,7,8,8a-hexahydro- $\beta$ ,delta,6-trihydroxy-2-methyl-8-(2-methyl-1-oxobutoxy)-, monosodium salt, [1S-[1 $\alpha$ ]pha( $\beta$ S*,deltaS*),2 $\alpha$ pha,6 $\alpha$ pha,8 $\beta$ (R*),8 $\alpha$ Alpha]]- [CAS]	81093-37-0 81131-70-6	US 4346227	Hypolipaeimic/Antiatherosclerosis	Atherosclerosis
Prazepam		2955-38-6			
praziquantel	4H-Pyrazino[2,1-a]isoquinolin-4-one, 2-(cyclohexylcarbonyl)-1,2,3,6,7,11b-hexahydro- [CAS]	55268-74-1	US 4001411	Schistosomicide	
prazosin	Piperazine, 1-(4-amino-6,7-dimethoxy-2-quinazolinyl)-4-(2-furanylcarbonyl)-[CAS]	19216-56-9 19237-84-4	US 4092315	Antihypertensive, adrenergic	Hypertension, general
Prednicarbate		73771-04-7			
prednimustine	Pregna-1,4-diene-3,20-dione, 21-[4-[bis(2-chloroethyl)amino]phenyl]-1-oxobutoxy]-11,17-dihydroxy-, (11 $\beta$ )- [CAS]	29069-24-7	GB 1272841	Anticancer, alkylating	
Prednisolone		50-24-8			
Prednisolone 21-Diethylaminoacetate		5626-34-6			
prednisolone farnesil	Pregna-1,4-diene-3,20-dione, 11,17-dihydroxy-21-[[3,7,11-trimethyl-1-oxo-2,6,10-dodecatrienyl)oxy]-, [11 $\beta$ ,21(2E,6E)]- [CAS]	118244-44-3	EP 332143	Antiarthritic, other	Arthritis, rheumatoid
Prednisolone Sodium Phosphate		125-02-0			
Prednisone		53-03-2			
Prednival		15180-00-4			
Prednylidene		599-33-7			
pregabalin	Hexanoic acid, 3-(aminomethyl)-5-methyl, (S)- [CAS]	148553-50-8		Antiepileptic	Epilepsy, general
Pregnan-3 $\alpha$ -ol-20-one		128-20-1			
Premarin + trimegestone	Estra-4,9-dien-3-one, 17-(2-hydroxy-1-oxopropyl)-17-methyl-, [17 $\beta$ (S)]- [CAS]	74513-62-5		Menopausal disorders	Hormone replacement therapy

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
prenalator	Phenol, 4-[2-hydroxy-3-[(1-methylethyl)amino]propoxy]-, hydrochloride, (S)-[CAS]	57526-81-5 61260-05-7	GB 1470039	Cardio stimulant	
<b>Prenoxdiazine</b>		<b>982-43-4</b>			
<b>Prenylamine</b>		<b>390-64-7</b>			
prezatide	Cuprate(1-), (N2-(N-glycyl-L-histidyl)-L-lysinate)(N2-(N-glycyl-L-histidyl)-L-lysinate(2-))-, hydrogen, [CAS]	130120-57-9		Vulnery	Wound healing
<b>Pridinol</b>		<b>511-45-5</b>			
<b>Prifinium</b>		<b>4630-95-9</b>			
<b>Prilocaine</b>		<b>721-50-6</b>			
<b>Primaquine</b>		<b>90-34-6</b>			
<b>Primidone</b>		<b>125-33-7</b>			
<b>Prinomastat</b>		<b>192329-42-3</b>			
PRO-2000			US 5614599	Antiviral, anti-HIV	Infection, HIV prophylaxis
<b>Probenecid</b>		<b>57-66-9</b>			
<b>Probucol</b>		<b>23288-49-5</b>			
procalnamide	Benzamide, 4-amino-N-[2-(diethylamino)ethyl]- [CAS]	51-06-9 614-39-1		Formulation, other	Arrhythmia, general
<b>Procaine</b>		<b>59-46-1</b>			
<b>Procarbazine</b>		<b>671-16-9</b>			
procatol	2(1H)-Quinolinone, 8-hydroxy-5-[1-hydroxy-2-[(1-methylethyl)amino]butyl]-, monohydrochloride [CAS]	59828-07-8 60443-17-6 72332-33-3	GB 1496766	Antiasthma	
prochlorperazine	10H-Phenothiazine, 2-chloro-10-[3-(4-methyl-1-piperazinyl)propyl]-, (Z)-2-butenedioate	58-38-8 84-02-6		Formulation, oral, other	Nausea and vomiting, general
procodazol	1H-Benzimidazole-2-propanoic acid [CAS]	23249-97-0	ES 407882	Anticancer, immunological	Cancer, general
<b>Procyclidine</b>		<b>77-37-2</b>			
<b>Procymate</b>		<b>13931-64-1</b>			
<b>Prodipine</b>		<b>31314-38-2</b>			
<b>Proflavine</b>		<b>92-62-6</b>			
<b>Progabide</b>		<b>62666-20-0</b>			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
progesterone	Pregn-4-ene-3,20-dione [CAS]	57-83-0		Formulation, transmucosal, systemic	Amenorrhoea
proglumetacin	1H-Indole-3-acetic acid, 1-(4-chlorobenzoyl)-5-methoxy-2-methyl-, 2-(4-(3-((4-(benzoylamino)-5-(dipropylamino)-1,5-dioxopentyl)oxy)propyl)-1-piperazinyl)ethyl ester, (+/-)- [CAS]	57132-53-3 59209-40-4	GB 1467568	Anti-inflammatory	Inflammation, general
proglumide	Penitamic acid, 4-(benzoylamino)-5-(dipropylamino)-5-oxo-, (+/-)- [CAS]	6620-60-6	DE 1518125	Antilulcer	Ulcer, gastric
Proheptazine		77-14-5			
Prolactin		9002-62-4			
Prolintane		493-92-5			
Prolonium		123-47-7			
Promazine		58-40-2			
Promedol		64-39-1			
Promegestone		34184-77-5			
promestriene	Estra-1,3,5(10)-triene, 17-methoxy-3-propoxy-, (17 $\beta$ )- [CAS]	39219-28-8	GB 1337198	Reproductive/gonadal, general	Acne
Promethazine		60-87-7			
Pronethalol		54-80-8			
propacetamol	Glycine, N,N-diethyl-, 4-(acetylamino)phenyl ester [CAS]	66532-85-2 66532-86-3	US 4127671	Formulation, parenteral, other	
propafenone	1-Propanone, 1-[2-[2-hydroxy-3-(propylamino)propoxy]phenyl]-3-phenyl- [CAS]			Antiarrhythmic	Fibrillation, ventricular
Propagermanium		54063-53-5	GB 1307455		
Propallylonal		12758-40-6			
Propamidine		545-93-7			
propane-1,2-diol		104-32-5			
Propanidid	1,2-propanediol	57-55-6		Formulation, dermal, topical	Infection, fungal, general
Propantheline		1421-14-3			
Proparacaine		50-34-0			
Propatyl		499-67-2			
propenidazole	ethyl trans-Alpha-acetyl-1-methyl-5-nitroimidazole-2-acrylate	2921-92-8			
		76448-31-2		Antifungal	Infection, trichomoniasis

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propentofylline	1H-Purine-2,6-dione, 3,7-dihydro-3-methyl-1-(5-oxohexyl)-7-propyl- [CAS]	55242-55-2	GB 1470220	Neuroprotective	Ischaemia, cerebral
Propicillin		551-27-9			
Propiomazine		362-29-8			
Propionic Acid		79-09-4			
propionyl L-carnitine	1-Propanaminium, 3-carboxy-N,N,N-trimethyl-2-(1-oxopropoxy)-, chloride, (R)- [CAS]	119793-66-7 20084-19-1	GB 2008578	Vasodilator, peripheral	Peripheral vascular disease
Propipocaine		3670-68-6			
Propiram		15686-91-6			
propiverine	2,2-diphenyl-2-(1-propoxy)acetic acid (1-methylpiperid-4-yl) ester hydrochloride	54556-98-8 60569-19-9		Urological	Incontinence
Propizepine		10321-12-7			
propofol	Phenol, 2,6-bis(1-methylethyl)- [CAS]	2078-54-8	US 4056635	Anaesthetic, injectable	Anaesthesia
Propoxycaine		550-83-4			
Propoxyphene		469-62-5			
propranolol	2-Propanol, 1-[(1-methylethyl)amino]-3-(1-naphthalenyl)oxy- [CAS]	318-98-9 525-66-6		Formulation, modified-release, <=24hr	Hypertension, general
Propylhexedrine		101-40-6			
Propylidone		587-61-1			
Propylthiouracil		51-52-5			
Propyphenazone		479-92-5			
Proquazone		22760-18-5			
Proscillaridin		466-06-8			
Prostacyclin		35121-78-9			
Prostaglandin E <sub>1</sub>		745-65-3			
Prostaglandin E <sub>2</sub>		363-24-6			
Prostaglandin F <sub>2α</sub>		551-11-1			
Prosultiamine		59-58-5			
Protein C		60202-16-6			
Protheobromine		50-39-5			
Prothipendyl		303-69-5			



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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Protiofate		58416-00-5			
Protionamide		14222-60-7			
protizinic acid	10H-Phenothiazine-2-acetic acid, 7-methoxy-Alpha, 10-dimethyl-, (+/-)- [CAS]	13799-03-6	US 3450698	Anti-inflammatory	
Protoanemonin		108-28-1			
Protokylol		136-70-9			
Protoporphyrin IX		553-12-8			
Protriptyline		438-60-8			
Pro-Urokinase		82657-92-9			
Proxazole		5696-9-3			
Proxibarbal		2537-29-3			
proxigermanium	Propanoic acid, 3,3'-(1,3-dioxo-1,3-digermoxanediyl)bis- [CAS]	12758-40-6	FR 2005110	Antiviral, other	Infection, hepatitis-B virus
Proxiphylline		603-00-9			
Prozapine		3426-8-2			
Prucalopride		179474-81-8			
prulifloxacin	1H,4H-[1,3]Thiazeto[3,2-a]quinoline-3-carboxylic acid, 6-fluoro-1-methyl-7-[4-[(5-methyl-2-oxo-1,3-dioxol-4-yl)methyl]-1-piperazinyl]-4-oxo- [CAS]	123447-62-1	EP 315828	Quinolone antibacterial	Infection, respiratory tract, general
Pseudococaine		478-73-9			
pseudoephedrine + triprolidine	Benzenemethanol, Alpha-[1-(methylamino)ethyl]-, hydrochloride, [S-(R*,R*)]-, mixt. with (E)-2-[1-(4-methylphenyl)-3-(1-pyrrolidinyl)-1-propenyl]pyridine monohydrochloride [CAS]			Formulation, modified-release, other	Rhinitis, allergic, general
pseudoephedrine	Benzenemethanol, Alpha-[1-(methylamino)ethyl]-, [S-(R*,R*)]- [CAS]	90-82-4, 8054-27-1, 345-78-8		Formulation, oral, other	Infection, respiratory tract, general
Psilocybin		520-52-5			
PSK-3841	Benzonitrile, 4-[3-(4-hydroxybutyl)-4,4-dimethyl-2,5-dioxo-1-imidazolidinyl]-2-(trifluoromethyl)- [CAS]	154992-24-2		Dermatological	Alopecia, general



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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
p-Sulfanilylbenzylamine		4393-19-5			
PT-141			US 6051555	Male sexual dysfunction	Impotence
Pteropterin		89-38-3			
Puromycin		53-79-2			
PX-12	1-Methylpropyl 2-mercaptoimidazolyl disulfide				
Pyrantel		15686-83-6			
Pyrazinamide		98-96-4			
Pyridinol Carbamate		1882-26-4			
Pyridostigmine Bromide		101-26-8			
Pyridoxal 5-Phosphate		54-47-7			
Pyridoxine		58-56-0			
Pyrilamine		91-84-9			
Pyrimethamine		58-14-0			
Pyrinoline		1740-22-3			
Pyrisuccideanol		33605-94-6			
Pyrithione		1121-30-8			
Pyrithyldione		77-04-3			
Pyritinol		1098-97-1			
Pyrocatechol		120-80-9			
Pyrogallol		87-66-1			
Pyronaridine		74847-35-1			
Pyrovalerone		3563-49-3			
Pyroxylin		9004-70-0			
Pyrrobutamine		91-82-7			
Pyrrocaine		2210-77-7			
Pyrrolnitrin		1018-71-9			
Pyrvinium Pamoate		3546-41-6			

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quazepam	2H-1,4-Benzodiazepine-2-thione, 7-chloro-5-(2-fluorophenyl)-1,3-dihydro-1-(2,2,2-trifluoroethyl)- [CAS]	36735-22-5	US 3845039	Hypnotic/Sedative	Insomnia
Quercetin		117-39-5			
quetiapine	Ethanol, 2-[2-(4-dibenzo[b,f][1,4]thiazepin-11-yl-1-piperazinyl)ethoxy]-, (E)-2-butenedioate (2:1) (salt) [CAS]	111974-69-7 111974-72-2	EP 240228	Neuroleptic	Schizophrenia
Quinacillin		1596-63-0			
quinacrine	N-(6-Chloro-2-methoxy-9-acridinyl)-N,N-diethyl-1,4-pentanediamine + 10H-Phenothiazine-10-propanamine, 2-chloro-N,N-dimethyl	83-89-6		Neurological	Creutzfeldt-Jakob disease
quinagolide	Sulfamide, N,N-diethyl-N-(1,2,3,4,4a,5,10,10a-octahydro-6-hydroxy-1-propylbenzo[g]quinolin-3-yl)-, (3Alpha,4aAlpha,10aDelta)- (+/-)- [CAS]	87056-78-8 94424-50-7 97805-49-7	EP 77754	Antiprolactin	Hyperprolactinaemia
quinapril	3-Isoquinolinecarboxylic acid, 2-[2-[[1-(ethoxycarbonyl)-3-phenylpropyl]amino]-1-oxopropyl]-1,2,3,4-tetrahydro-, [3S-[2[R*(R*)],3R*]]- [CAS]	82586-55-8 85441-61-8 90243-99-5	EP 49605	Antihypertensive, renin system	Hypertension, general
quinaprilat	3-Isoquinolinecarboxylic acid, 2-[2-[[1-carboxy-3-phenylpropyl]amino]-1-oxopropyl]-1,2,3,4-tetrahydro-, [3S-[2[R*(R*)],3R*]]- [CAS]	82768-85-2	EP 46953	Antihypertensive; renin system	Hypertension, general
Quinapyramine		20493-41-8			
Quinbolone		2487-63-0			
Quinestradiol		1169-79-5			
Quinestrol		152-43-2			
Quinethazone		73-49-4			
quinfamide	2-Furan carboxylic acid, 1-(dichloroacetyl)-1,2,3,4-tetrahydro-6-quinolinyl ester [CAS]	62265-68-3	US 3997542	Amoebicide	
quinidine	Cinchonan-9-ol, 6'-methoxy-, (9S)-, sulfate (1:1) (salt) [CAS]	747-45-5 56-54-2		Formulation, modified-release, other	Arrhythmia, general

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Quinine		130-95-0			
Quinocide		525-61-1			
Quinupramine		31721-17-2			
Quinupristin		120138-50-3			
R-107500	cis-2,3,3a,8-tetrahydro-N,N-dimethyl-2,3,4,8-tetrahydro-2-methanamine		WO 9614320	Anxiolytic	Anxiety, general
R-667			WO 0204439	COPD treatment	Emphysema, general
rabeprazole	1H-Benzimidazole, 2-[[[4-(3-methoxypropoxy)-3-methyl-2-pyridinyl]methyl]sulfinyl]-, sodium salt- [CAS]	117976-89-3 117976-90-6	EP 268956	Antilulcer	Ulcer, gastric
racecadotril	Glycine, N-[2-[(acetylthio)methyl]-1-oxo-3-phenylpropyl]-, phenylmethyl ester, (+/-)- [CAS]	112573-72-5 81110-73-8	EP 38758	Antidiarrhoeal	Diarrhoea, general
Racemethorphan		510-53-2			
raloxifene	Methanone, [6-hydroxy-2-(4-hydroxyphenyl)benzo[b]thien-3-yl][4-[2-(1-piperidinyl)ethoxy]phenyl]-, hydrochloride [CAS]	82640-04-8 84449-90-1	EP 62503	Osteoporosis treatment	Osteoporosis
raltitrexed	L-glutamic acid, N-[[5-[[[1,4-dihydro-2-methyl-4-oxo-6-quinazolinyl)methyl]methylamino]-2-thienyl]carbonyl]- [CAS]	112887-68-0	EP 239362	Anticancer, antimetabolite	Cancer, colorectal
ramatroban	9H-Carbazole-9-propanoic acid, 3-[[[4-(fluorophenyl)sulfonyl]amino]-1,2,3,4-tetrahydro-, (R)- [CAS]	116649-85-5	EP 242518	Antiallergic, non-asthma	Rhinitis, allergic, perennial
Ramifenazone		3615-24-5			
ramipril	Cyclopenta[b]pyrrole-2-carboxylic acid, 1-[2-[[1-(ethoxycarbonyl)-3-phenylpropyl]amino]-1-oxopropyl]octahydro-, [2S-[1[R*(R*)],2Alpha,3aß,6aß]]-[CAS]	87269-97-4 87333-19-5	EP 79022	Antihypertensive, renin system	Heart failure
ramosetron	Methanone, (1-methyl-1H-indol-3-yl)(4,5,6,7-tetrahydro-1H-benzimidazol-5-yl)-, monohydrochloride, (R)- [CAS]	132907-72-3 132036-88-5	EP 381422	Antiemetic	Nausea and vomiting, general

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Ramot project No. 1097			US 5730992	Dermatological	Unspecified
Ranimustine		58994-96-0			
ranitidine	1,1-Ethenediamine, N-[2-[[[5-((dimethylamino)methyl)-2-furanyl]methyl]thio]ethyl]-N'-methyl-2-nitro- [CAS]	66357-35-5	US 4128658	Antiulcer	Ulcer, duodenal
ranitidine bismuth citrate	1,2,3-Propanetricarboxylic acid, 2-hydroxy-bismuth(3+) salt (1:1), compd. with N-(2-(((5-((dimethylamino)methyl)-2-furanyl)methyl)thio)ethyl)-N'-methyl-2-nitro-ethenediamine (1:1)- [CAS]	128345-62-0	EP 533281	Antiulcer	Ulcer, duodenal
ranolazine	1-Piperazineacetamide, N-(2,6-dimethylphenyl)-4-[2-hydroxy-3-(2-methoxyphenoxy)propyl]-, (+/-)- [CAS]	95635-55-5 95635-56-6	EP 126449	Antianginal	Angina, general
Ranpirnase		133737-96-9			
Rapacuronium		156137-99-4			
rasagiline	1H-Inden-1-amine, 2,3-dihydro-N-2-propynyl-, (R)-, [CAS]	161735-79-1	US 5457133	Antiparkinsonian	Parkinson's disease
Raubasine		483-04-5			
ravuconazole	Benzonitrile, 4-[2-[(1R,2R)-2-(2,4-difluorophenyl)-2-hydroxy-1-methyl-3-(1H-1,2,4-triazol-1-yl)propyl]-4-thiazolyl]- [CAS]	182760-06-1		Antifungal	Infection, meningitis, general
raxofelast	2-Benzofuranacetic acid, 5-(acetoxy)-2,3-dihydro-4,6,7-trimethyl-, (+)- [CAS]	128232-14-4	US 4999350	Symptomatic antidiabetic	Nephropathy, diabetic
razoxane	2,6-Piperazine-1,4-dione, 4,4'-(1-methyl-1,2-ethanediy)bis- [CAS]	21416-67-1, 21416-87-5	GB 1234935	Anticancer, other	Cancer, general
RC-529	Tetradecanoic acid (1R)-1-(2-((2-(2-deoxy-3-O-((3R)-1-oxo-3-((1-oxotetradecyl)oxy)tetradecyl)amino-4-O-phosphono-β-D-glucopyranosyl)oxy)ethyl)amino)-2-oxoethyl)dodecyl ester, compd. with N,N-diethylethanamine (1:1) [CAS]	216014-46-9		Immunostimulant, other	Vaccine adjunct
rebamipide	4-Quinolonepropanoic acid, Alpha-[(4-chlorobenzoyl)amino]-1,2-dihydro-2-oxo- [CAS]	90098-04-7	DE 3324034	Antiulcer	

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rebimastat	L-Valinamide, N-((2S)-2-mercapto-1-oxo-4-(3,4,4-trimethyl-2,5-dioxo-1-imidazolidinyl)butyl)-L-leucyl-N,3-dimethyl- [CAS]	259188-38-0		Anticancer, other	Cancer, lung, non-small cell
reboxetine	Morpholine, 2-[(2-ethoxyphenoxy)phenylmethyl]-, (R*,S*)- [CAS]	71620-89-8, 98769-81-4	US 429449	Antidepressant	Depression, general
Remacemide		128298-28-2			
remifentanyl	1-Piperidinepropanoic acid, 4-(methoxycarbonyl)-4-((1-oxopropyl)phenylamino)-methyl ester- [CAS]	132539-07-2, 132875-61-7	EP 383579	Analgesic, other	Pain, general
reminertant	Tricyclo[3.3.1.1 <sup>3,7</sup> ]decane-2-carboxylic acid, 2-[[[1-(7-chloro-4-quinolinyl)-5-(2,6-dimethoxyphenyl)-1H-pyrazol-3-yl]carbonyl]amino]- [CAS]	146362-70-1	EP 699438	Neuroleptic	Schizophrenia
Remoxipride		80125-14-0			
renzapride	Benzamide, 4-amino-N-1-azabicyclo[3.3.1]non-4-yl-5-chloro-2-methoxy- [CAS]	109872-41-5, 88721-77-1	JP 58188885	Gastroprokinetic	Irritable bowel syndrome
repaglinide	Benzoic acid, 2-ethoxy-4-[2-[[3-methyl-1-[2-(1-piperidinyl)phenyl]butyl]amino]-2-oxoethyl]-, (S)- [CAS]	135062-02-1	WO 9300337	Antidiabetic	Diabetes, Type II
repertaxin L-lysine salt	2(R)-4-isobutylphenylpropionyl methanesulfonamide L-lysine salt		WO 0024710	Cardiovascular	Reperfusion injury
repinotan	1,2-Benzisothiazol-3(2H)-one, 2-(4-((3,4-dihydro-2H-1-benzopyran-2-yl)methyl)amino)butyl)-, 1,1-dioxide, monohydrochloride [CAS]	144980-29-0, 144980-77-8	US 5137901	Neuroprotective	Ischaemia, cerebral
repirinast	4H-Pyran[3,2-c]quinoline-2-carboxylic acid, 5,6-dihydro-7,8-dimethyl-4,5-dioxo-, 3-methylbutyl ester [CAS]	73080-51-0	US 4298610	Antiasthma	
Reposal		3625-25-0			

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reproterol	1H-Purine-2,6-dione, 7-[3-[[2-(3,5-dihydroxyphenyl)-2-hydroxyethyl]amino]propyl]-3,7-dihydro-1,3-dimethyl- [CAS]	13055-82-8 54063-54-6	FR M5969	Antiasthma	Asthma
<b>Rescimetol</b>		73573-42-9			
<b>Rescinnamine</b>		24815-24-5			
<b>Reserpiline</b>		131-02-2			
<b>Reserpine</b>		50-55-5			
<b>Resibufofenin</b>		465-39-4			
resiquimod	1H-Imidazo(4,5-c)quinoline-1-ethano(ethoxymethyl)-Alpha, Alpha-dimethyl- [CAS]	144875-48-9	US 5389640	Antiviral; other	Infection, hepatitis-C virus
<b>Resorcinol</b>		108-46-3			
<b>Reteplase</b>		133652-38-7			
retigabine	Carbamic acid, (2-amino-4-(((4-fluorophenyl)methyl)amino)phenyl)-, ethyl ester [CAS]	150812-12-7	DE 4200259	Antiepileptic	Epilepsy, general
retinoic acid	Retinoic acid [CAS]	302-79-4		Formulation, parenteral, other	Cancer, leukaemia, acute myelogenous
Revimid			US 6281230	Anticancer, other	Cancer, myeloma
R-flurbiprofen	[1,1'-Biphenyl]-4-acetic acid, 2-fluoro-Alpha-methyl	5104-49-4		Anticancer, other	Cancer, prostate
<b>Rho (D) Immune Globulin (Human)</b>					
Rho-kinase inhibitors			WO 0156988	Antiasthma	Unspecified
ribavirin	1H-1,2,4-Triazole-3-carboxamide, 1-β-D-ribofuranosyl- [CAS]	36791-04-5	US 4211771	Antiviral, other	Infection, haemorrhagic fever
<b>Riboflavin</b>		146-17-8			
ribostamycin	D-Streptamine, O-2,6-diamino-2,6-dideoxy-Alpha-D-glucopyranosyl-(1-4)-O-[β-D-ribofuranosyl-(1-5)]-2-deoxy- [CAS]	25546-65-0	GB 1254883	Aminoglycoside antibiotic	Infection, general
<b>Ricinoleic Acid</b>		141-22-0			
<b>Ridogrel</b>		110140-89-1			



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rifabutin	Rifamycin XIV, 1',4-didehydro-1-deoxy-1,4-dihydro-5'-(2-methylpropyl)-1-oxo-[CAS]	72559-06-9	US 4219478	Antimycobacterial	Infection, Mycobacterium avium complex
rifalazil	Rifamycin VIII, 1',4-didehydro-1-deoxy-1,4-dihydro-3'-hydroxy-5'-[4-(2-methylpropyl)-1-piperazinyl]-1-oxo- [CAS]	129791-92-0 129791-94-2 133633-12-2	EP 366914	Antimycobacterial	Infection, tuberculosis
rifametane	Rifamycin, 3-[[[1-(diethylamino)ethylidene]hydrazono]methyl]- [CAS]	94168-98-6	EP 119571	Antimycobacterial	Infection, general
<b>Rifamide</b>		2750-76-7			
rifampicin + trimethoprim	Rifamycin, 3-[[[4-methyl-1-piperazinyl]imino]methyl]-, mixt. with 5-[(3,4,5-trimethoxyphenyl)methyl]-2,4-pyrimidinediamine [CAS]	61498-94-0		Formulation, fixed-dose combinations	Infection, general
<b>Rifampin</b>		13292-46-1			
<b>Rifamycin SV</b>		6998-60-3			
rifapentine	Rifamycin, 3-[[[4-cyclopentyl-1-piperazinyl]imino]methyl]- [CAS]	61379-65-5	DE 2608218	Antibiotic, other	Infection, tuberculosis
rifaximin	Epoxy-pentadeca[1,11,13]trienimino)benzofuro[4,5-e]pyrido[1,2-a]benzimidazole-1,15(2H)-dione, 25-(acetyloxy)-5,6,21,23-tetrahydroxy-27-methoxy-2,4,11,16,20,22,24,26-octamethyl-, [2S-(2R*,16Z,18E,20R*,22S*,23S*,24S*,25R*,26S*,27R*,28E)]	80621-81-4	GB 2079270	Antibiotic, other	Infection, GI tract
rifaximine cream	4-deoxy-4'-methylpyrido[1',2'-1,2]imidazo[5,4-c]rifamycin SV	80621-81-4	BE 888895	Formulation, dermal, topical	Infection, dermatological
<b>Rilmazafone</b>		99593-25-6			
rilmenidine	2-Oxazolamine, N-(dicyclopropylmethyl)-4,5-dihydro- [CAS]	54187-04-1 54249-57-9	DE 2362754	Antihypertensive, adrenergic	Hypertension, general
riluzole	2-Benzothiazolamine, 6-(trifluoromethoxy)-[CAS]	1744-22-5	EP 50551	Neuroprotective	Amyotrophic lateral sclerosis
<b>Rimantadine</b>		13392-28-4			

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rimazolium	4H-Pyrido[1,2-a]pyrimidin-3-(ethoxycarbonyl)-6,7,8,9-tetrahydro-1,6-dimethyl-4-oxo-, [CAS]	28610-84-6 35615-72-6	DE 2461349	Analgescic, NSAID	
rimexolone	Androsta-1,4-dien-3-one, 11-hydroxy-16,17-dimethyl-17-(1-oxopropyl)-, (11 $\beta$ , 16 $\alpha$ ), [CAS]	49697-38-3	DE 2301317	Ophthalmological	Inflammation, ocular
Rimiterol		32953-89-2			
rimonabant	1H-Pyrazole-3-carboxamide, 5-(4-chlorophenyl)-1-(2,4-dichlorophenyl)-4-methyl-N-1-piperidinyl-, monohydrochloride [CAS]	158681-13-1	US 5624941	Anorectic/Antiobesity	Obesity
riodoxol	1,3-Benzenediol, 2,4,6-triiodo- [CAS]	19403-92-0	US 3755251	Antiviral, other	
Rioprostil		77287-05-9			
risedronate	Phosphonic acid, (1-hydroxy-2-(3-pyridinyl)ethylidene)bis-, monosodium salt	115436-72-1	EP 304961	Osteoporosis treatment	Paget's disease
Risedronic Acid		105462-24-6			
risperidone	4H-Pyrido[1,2-a]pyrimidin-4-one, 3-[2-[4-(6-fluoro-1,2-benzisoxazol-3-yl)-1-piperidinylethyl]-6,7,8,9-tetrahydro-2-methyl- [CAS]	106266-06-2	EP 196132	Neuroleptic, formulation, optimized, microencapsulate	Schizophrenia
Ritanserlin		87051-43-2			
Ritipenem		84845-57-8			
ritodrine	Benzenemethanol, 4-hydroxy-Alpha-[1-[2-(4-hydroxyphenyl)ethyl]amino]ethyl]-, (R*, S*)- [CAS]	23239-51-2 26652-09-5	US 3410944	Labour inhibitor	Labour, preterm
ritonavir	2,4,7,12-Tetraazatridecan-13-oic acid, 10-hydroxy-2-methyl-5-(1-methylethyl)-1-(2-(1-methylethyl)-4-thiazolyl)-3,6-dioxo-8,11-bis(phenylmethyl)-, 5-thiazolyl-methyl ester, (5S-(5R*, 8R*, 10R*, 11R*))- [CAS]	155213-67-5	WO 9414436	Antiviral, anti-HIV	Infection, HIV/AIDS
Rituximab		174722-31-7			
rivastigmine	Carbamic acid, ethylmethyl-, 3-[1-(dimethylamino)ethyl]phenyl ester, (S)- [CAS]	123441-03-2 129101-54-8	DE 3805744	Cognition enhancer	Alzheimer's disease

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rizatriptan	1H-Indole-3-ethanamine, N,N-dimethyl-5-(1H-1,2,4-triazol-1-ylmethyl)-, [CAS]	145202-66-0 159776-67-7 144034-80-0	EP 497512	Antimigraine	Migraine
RJR-2403	3-Buten-1-amine, N-methyl-4-(3-pyridinyl)-, (3E)-, (2E)-2-butenedioate (1:1) [CAS]	183288-99-5		Cognition enhancer	Alzheimer's disease
RNA Stealth Nucleosides	5-Formyluridine			Antiviral, other	Infection, hepatitis-C virus
Ro-0094889	2',3'-Di-O-acetyl-5'-vinylcytidine			Anticancer, antimetabolite	Cancer, general
Ro-61-1790	2-Pyridinesulfonamide, N-[6-(2-hydroxyethoxy)-5-(2-methoxyphenoxy)-2-[2-(1H-tetrazol-5-yl)-4-pyridinyl]-4-pyrimidinyl]-5-methyl-, [CAS]	180384-56-9	WO 9619459	Cardiovascular	Haemorrhage, subarachnoid
Rociverine	Pyrrolidinium, 1-[(2S,3Alpha,5Alpha,16S,17S)-17-(acetyloxy)-3-hydroxy-2-(4-morpholinyl)androstan-16-yl]-1-(2-propenyl)-, bromide- [CAS]	53716-44-2			
rocuronium		104855-17-6 104884-91-5 119302-91-9 143558-00-3	EP 287150	Muscle relaxant	Muscle spasm, general
rofecoxib	2(5H)-Furanone, 4-(4-(methylsulfonyl)phenyl)-3-phenyl-, [CAS]	162011-90-7	US 5474995	Analgesic, NSAID	Arthritis, osteo
roflumilast	Benzamide, 3-(cyclopropylmethoxy)-N-(3,5-dichloro-4-pyridinyl)-4-(difluoromethoxy)- [CAS]	162401-32-3	WO 9501338	COPD treatment	Chronic obstructive pulmonary disease
rokitamycin	Leucomycin V, 4B-butanolate 3B-propanoate [CAS]	74014-51-0	US 4242504	Macrolide antibiotic	Infection, general
Rolipram		61413-54-5			
Rolitetracycline		751-97-3			
Romurtide		78113-36-7			
Ronifibrate		42597-57-9			
ropinirole	2H-Indol-2-one, 4-[2-(dipropylamino)ethyl]-1,3-dihydro-, monohydrochloride- [CAS]	91374-20-8 91374-21-9	EP 266033	Antiparkinsonian	Parkinson's disease

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ropivacaine	2-Piperidinecarboxamide, N-(2,6-dimethylphenyl)-1-propyl-, (S)- [CAS]	84057-95-4 98717-15-8	EP 239710	Anaesthetic, local	Anaesthesia
<b>Roquinimex</b>		84088-42-6			
rosaprostol	Cyclopentanepentanoic acid, 2-hexyl-5-hydroxy- [CAS]	56695-65-9	GB 1523355	Prostaglandin	
<b>Rosaramicin</b>		35834-26-5			
<b>Rose Bengal</b>		632-68-8			
rosiglitazone	2,4-Thiazolidinedione, 5-((4-(2-(methyl-2-pyridinylamino)ethoxy)phenyl)methyl)-, (Z)-2-butenedioate (1:1) [CAS]	122320-73-4 155141-29-0	US 5002953	Antidiabetic	Diabetes, Type II
rosoxacin	3-Quinolonecarboxylic acid, 1-ethyl-1,4-dihydro-4-oxo-7-(4-pyridinyl)- [CAS]	40034-42-2	US 3753993	Quinolone antibacterial	Infection, gonorrhoea
rostapofin	Tin, dichloro[ethyl 3,4,20,21-tetrahydro-4,9,14,19-tetraethyl-18,19-dihydro-3,8,13,18-tetramethyl-20-phorbinecarboxylato(2-)-kappaN23,kappaN24,kappaN25,kappaN26]-, (OC-6-13)- [CAS]	114494-17-6		Ophthalmological	Macular degeneration
rosuvastatin	6-Heptenoic acid, 7-(4-(4-fluorophenyl)-6-(1-methylethyl)-2-(methyl(methylsulfonyl)amino)-5-pyrimidinyl)-3,5-dihydroxy- (S-(R*, S*(E))) [CAS]	147098-20-2	JP 2648897	Hypolipaeic/Antiatherosclerosis	Hyperlipidaemia, general
rotigotine	1-Naphthalenol, 5,6,7,8-tetrahydro-6-[propyl(2-(2-thienyl)ethyl)amino]-, (S)- [CAS]	99755-59-6	US 4564628	Antiparkinsonian	Parkinson's disease
<b>Rotraxate</b>		92071-51-7			
<b>Roxarsone</b>		121-19-7			
roxatidine	Acetamide, 2-(acetyloxy)-N-[3-(1-piperidinylmethyl)phenoxy]propyl]-, [CAS]	78628-28-1 93793-83-0	EP 24510	Antilucer	Ulcer, gastric
roxifiban	L-Alanine, 3-(((3-(4-(aminoiminomethyl)phenyl)-4,5-dihydro-5-isoxazolyl)acetyl)amino)-N-(butoxycarbonyl)-, methyl ester, (R)-, [CAS]	176022-59-6	US 5849736	Antithrombotic	Thrombosis, general
<b>Roxindole</b>		112192-04-8			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
roxithromycin	Erythromycin, 9-[O-[(2-methoxyethoxy)methyl]oxime] [CAS]	80214-83-1 80214-86-4	EP 33255	Macrolide antibiotic	Infection, general
RPR-109881A	Benzenepropanoic acid, $\beta$ -(((1,1-dimethylethoxy)carbonyl)amino)-Alpha-hydroxy-(1S,2S,4S,7R,8aR,9aS,10aR,12aS,12bR)-7,12a-bis(acetyloxy)-1-(benzoyloxy)-1,3,4,7,8,9,9a,10,10a,12,12a,12b-dodecahydro-2-hydroxy-5,13,13-trimethyl-8-oxo-2,6-methano-2H-cyclodeca(3,4)cyclopropano (4,5) benz (1,2-b) oxet-4-yl ester, dihydrate Alpha R, betaS [CAS]	192573-38-9		Anticancer, other	Cancer, lung, general
RPR-130401	4,9-Ethano-3aH-benz[flisoindole-3a-carboxylic acid, 1,2,3,4,9,9a-hexahydro-2-[2-(2-methoxyphenyl)-1-oxo-2-propenyl]-9-(4-methylphenyl)-, (3aR,4S,9S,9aR)-rel- [CAS]	210282-69-2	WO 9829390	Anticancer, other	Cancer, general
R-roscovitine	N,N'-bis(3-hydroxyphenyl)pyridazine-3,6-diamine		US 6316456	Anticancer, other	Cancer, lung, non-small cell
RS-0406				Neuroprotective	Alzheimer's disease
RSR-13		131179-95-8			
Rubijervine		79-58-3			
rubitecan	1H-Pyrano(3',4':6,7)indolizino(1,2-b)quinoline-3,14(4H,12H)-dione, 4-ethyl-4-hydroxy-10-nitro-, (S)- [CAS]	91421-42-0	US 6485514	Anticancer, other	Cancer, pancreatic
ruboxistaurin	9H,18H-5,21:12,17-Dimethenodibenzo(e,k)pyrrolo(3,4-h)(1,4,13)oxadiazacyclohexadecine-18,20(19H)-dione,9-((dimethylamino)methyl)-6,7,10,11-tetrahydro-, (S)- [CAS]	169939-94-0		Symptomatic antidiabetic	Retinopathy, diabetic
Rufinamide		106308-44-5			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
rufloxacin	7H-Pyrido[1,2,3-de]-1,4-benzothiazine-6-carboxylic acid, 9-fluoro-2,3-dihydro-10-(4-methyl-1-piperazinyl)-7-oxo- [CAS]	101363-10-4 102052-47-1 106017-08-7	EP 165375	Quinolone antibacterial	Infection, general
rupatadine	5H-Benzo[5,6]cyclohepta[1,2-b]pyridine, 8-chloro-6,11-dihydro-11-[1-[(5-methyl-3-pyridinyl)methyl]-4-piperidinylidene]-, trihydrochloride- [CAS]	156611-76-6 153-18-4	EP 0577957	Antiallergic, non-asthma	Rhinitis, allergic, seasonal
Rutin					
RWJ-54428	5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[[(2Z)-(2-amino-5-chloro-4-thiazolyl)(hydroxymino)acetyl]amino]-3-[[3-[[[(2-aminoethyl)thio]methyl]-4-pyridinyl]thio]-8-oxo-, (6R,7R)- [CAS]	189448-35-9	WO 9713772	Cephalosporin, injectable	Infection, beta-lactamase resistant
S-0139	Olean-12-en-28-oic acid, 27-[[3-[5-hydroxy-2-[(4-methoxy-1,4-dioxo-2-butenyl)aminophenyl]-1-oxo-2-propenyl]oxy]-3-oxo- [CAS]	193969-54-9	WO 9727314	Cardiovascular	Ischaemia, cerebral
S-15535	Piperazine, 1-(2,3-dihydro-1,4-benzodioxin-5-yl)-4-(2,3-dihydro-1H-inden-2-yl)- [CAS]	146998-34-7		Cognition enhancer	Cognitive disorder, general
S-18886	1-Naphthalenepropanoic acid, 6-(((4-chlorophenyl)sulfonyl)amino)-5,6,7,8-tetrahydro-2-methyl [CAS]	165537-73-5		Antithrombotic	Thrombosis, general
S-34730	7-chloro-6-sulfamoyl-2-(1H)-quinoline-3-phosphonic acid			Neuroprotective	Unspecified
S-3578	7β-[2-(5-amino-1,2,4-thiadiazol-3-yl)-2(Z)-ethoxyiminoacetamido]-3-(1-(N-methylaminopropyl)-1H-imidazo[4,5-b]pyridinium-4-methyl-3-cephem-4-carboxylate monosulfate			Cephalosporin, injectable	Infection, general



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S-36496	2-{N-[4-(4-Chlorophenylsulfonylamino)butyl]-N-{3-[(4-isopropylthiazol-2-yl)methoxy]benzyl}sulfamoyl}benzoic acid			Antiasthma	Asthma
S-36527	2-{N-[4-(4-Chlorophenylsulfonylamino)butyl]-N-{3-[2-(4-cyclobutylthiazol-2-yl)ethyl]benzyl}sulfamoyl}benzoic acid			Antiasthma	Asthma
S-5751	(1R,2R,3S,5S)-7-[2-(5-Hydroxybenzothiophen-3-ylcarboxamido)-6,6-dimethylbicyclo[3.1.1]hept-3yl]-5(Z)-heptenoic acid			Antiallergic, non-asthma	Allergy, general
S-8510	Imidazo[4,5-d]pyrano[4,3-b]pyridine, 1,6,7,9-tetrahydro-2-(3-isoxazolyl)-, phosphate (1:1) [CAS]	151466-23-8	EP 556008	Cognition enhancer	Alzheimer's disease
S-8921	2-Naphthalenecarboxylic acid, 1-(3,4-dimethoxyphenyl)-3-(3-ethyl-1-oxopentyl)-4-hydroxy-6,7,8-trimethoxy-, methyl ester [CAS]	151165-96-7	WO 9308155	Hypolipaeamic/Antiatherosclerosis	Hypercholesterolaemia
Sabcomeline		159912-53-5			
Sabeluzole		104383-17-7			
S-Adenosylmethionine		29908-03-0			
safinamide	(S)-(+)-2-[4-(3-fluorobenzoyloxy)benzylamino]propanamide methanesulfonate	133865-89-1	AU 711309	Antiepileptic	Epilepsy, general
Salacetamide		487-48-9			
Salazosulfadimidine		2315-8-4			
salbutamol	1,3-Benzenedimethanol, Alpha 1-[[[(1,1-dimethylethyl)amino]methyl]-4-hydroxy-[CAS]	18559-94-9	EP 451745	Formulation, inhalable, topical, dry powder	Asthma
Salicin		138-52-3			
Salicyl Alcohol		90-01-7			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Salicylamide		65-45-2			
Salicylamide O-Acetic Acid		25395-22-6			
Salicylanilide		87-17-2			
Salicylic Acid		69-72-7			
Salicylsulfuric Acid		89-45-2			
Salinazid		495-84-1			
salmeterol	1,3-Benzenedimethanol, 4-hydroxy-Alpha1 [[[6-(4-phenylbutoxy)hexylamino]methyl]- (±)-1-hydroxy-2-naphthalenecarboxylate [CAS]	89365-50-4 94749-08-3	WO 9006775	Antiasthma	Asthma
Salsalate		552-94-3			
Salverine		6376-26-7			
Samarium <sup>153</sup> Sm		154427-83-5			
Lexidronam					
sampatriat	L-Tyrosine, N2-(methylsulfonyl)-L-lysyl-1- [(2S)-3-amino-2- carboxypropyl]cyclopentanecarboxyl- [CAS]	129981-36-8	EP 358398	Antihypertensive, renin system	Hypertension, general
Sancycline		808-26-4			
Saperconazole		110588-57-3			
sapropterin	4(1H)-Pteridinone, 2-amino-6-(1,2- dihydroxypropyl)-5,6,7,8-tetrahydro-, dihydrochloride, [6R-[6R*(1R*,2S*)]]- [CAS]	69056-38-8 62989- 33-7	EP 191335	Antidepressant	Hyperphenylalaninaemia
saquinavir	Butanediamide, N1-[3-[3-[[[1,1- dimethylethyl)amino]carbonyl]octahydro- 2(1H)-isoquinolinyl]-2-hydroxy-1- (phenylmethyl)propyl]-2-[[2- quinolinylcarbonyl)amino]-, [3S- [2(1R*(R*),2S*),3Alpha,4aß,8aß]]- [CAS]	127779-20-8	EP 432695	Antiviral, anti-HIV	Infection, HIV/AIDS
Saralasin		34273-10-4			

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API Generic Name	API-Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
saredutant	Benzamide, N-[4-[4-(acetylamino)-4-phenyl-1-piperidinyl]-2-(3,4-dichlorophenyl)butyl]-N-methyl-, (S)- [CAS]	142001-63-6	EP 474561	Antiasthma	Asthma
sarizotan	3-Pyridinemethanamine, N-((3,4-dihydro-2H-1-benzopyran-2-yl)methyl)-5-(4-fluorophenyl)- [CAS]	177975-08-5		Antiparkinsonian	Parkinson's disease
sarpogrelate	Butanedioic acid, mono[2-(dimethylamino)-1-[[2-(3-methoxyphenyl)ethyl]phenoxy]methyl]ethyl ester [CAS]	125926-17-2	EP 398326	Antithrombotic	
Satigrel		111753-73-2			
satraplatin	Platinum, bis(acetato-O)amminedichloro(cyclohexanamine)-, (OC-6-43)- [CAS]	129580-63-8	EP 328274	Anticancer, alkylating	Cancer, prostate
Satumomab		144058-40-2			
SB-237376	N-[3-[[2-(3,4-dimethoxyphenyl)ethyl]amino]propyl]-4-nitrobenzamide, HCl			Antiarrhythmic	Fibrillation, atrial
SB-238039	(5-(2-phenylamino-4-pyrimidinyl)-4-(4-fluorophenyl)-1-(4-piperidinyl)imidazole			Anticancer, other	Cancer, general
SB-277011	trans-N-[4-[2-(6-Cyano-1,2,3,4-tetrahydroisoquinolin-2-yl)ethyl]cyclohexyl]-4-quinolinecarboxamide			Neuroleptic	Schizophrenia
Scarlet Red		85-83-6			
SCH-00013	Benzonitrile, 4-[2-[3,6-dihydro-4-(1,4,5,6-tetrahydro-6-oxo-3-pyridazinyl)-1(2H)-pyridinyl]-1-hydroxyethyl]- [CAS]	217963-18-3	EP 618204	Cardio stimulant	Heart failure
Sch-23863	(2-[10,11-Dihydro-5-ethoxy-5H-dibenzo[a,d] cyclohepten-S-yl]-N, N-dimethyl)-ethanamine			Immunosuppressant	Inflammation, general

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Sch-57790	1-Piperazineacetoneitrile, 4-cyclohexyl-alpha-[4-[(S)-(4-methoxyphenyl)sulfonyl]phenyl]- [CAS]	221660-80-6		Cognition enhancer	Alzheimer's disease
Sch-63390	7H-Pyrazolo[4,3-e][1,2,4]triazolo[1,5-c]pyrimidin-5-amine, 2-(2-furanyl)-7-(3-phenylpropyl)- [CAS]	174648-45-4		Antiparkinsonian	Parkinson's disease
Scillarenin		465-22-5			
Scopolamine		51-34-3			
Scopolamine N-Oxide		97-75-6			
scopolamine	Benzeneacetic acid, Alpha-(hydroxymethyl)-, 9-methyl-3-oxa-9-azatricyclo[3.3.1.0 <sup>2,4</sup> ]non-7-yl ester, [7(S)-(1Alpha,2beta,4beta,5Alpha,7beta)]- [CAS]	51-34-3	US 4262003	Formulation, transdermal, other	Nausea and vomiting, general
SCS technology			US 6046188	Antiasthma	Unspecified
secalciferol	9,10-Secocholesta-5,7,10(19)-triene-3,24,25-triol, (3beta,5Z,7E,24R)- [CAS]	55721-11-4	EP 301167	Osteoporosis treatment	Osteodystrophy
secnidazole	1H-Imidazole-1-ethanol, Alpha,2-dimethyl-5-nitro- [CAS]	3366-95-8	FR M3270	Protozoacide	Infection, trichomoniasis
Secobarbital		309-43-3			
selegiline	Benzeneethanamine, N,Alpha-dimethyl-N-2-propynyl-, (R)- [CAS]	14611-51-9	GB 1153578	Antiparkinsonian	
Selenomethionine		1464-42-2			
Sematilide		101526-83-4			
Semotiadiil		116476-13-2			
seocalcitol	1,3-Cyclohexanediol, 5-((1-(6-ethyl-6-hydroxy-1-methyl-2,4-octadienyl)octahydro-7a-methyl-4H-inden-4-ylidene)ethylidene)-4-methylene-, (1R-(1Alpha(1R*,2E,4E),3abeta,4E(1R*,3S*,5Z),7aAlpha))- [CAS]	134404-52-7	WO 9100855	Anticancer, other	Cancer, liver
Sepimostat		103926-64-3			
seratrovast	Benzeneheptanoic acid, zeta-(2,4,5-trimethyl-3,6-dioxo-1,4-cyclohexadien-1-yl)-, (+/-)- [CAS]	103187-07-1 112665-43-7	EP 232089	Antiasthma	Asthma

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
sertaconazole	1H-Imidazole, 1-[2-[(7-chlorobenzol[blthien-3-yl)methoxy]-2-(2,4-dichlorophenyl)ethyl]-[CAS]	99592-32-2	EP 151477	Antifungal	Infection, dermatological
sertindole	2-Imidazolidinone, 1-[2-[4-[5-chloro-1-(4-fluorophenyl)-1H-indol-3-yl]-1-piperidinyl]ethyl]- [CAS]	106516-24-9	EP 392959	Neuroleptic	Schizophrenia
sertraline	1-Naphthalenamine, 4-(3,4-dichlorophenyl)-1,2,3,4-tetrahydro-N-methyl-, (1S-cis)- [CAS]	79559-97-0 79617-96-2 79617-97-3	EP 30081	Antidepressant	Depression, general
<b>Setastine</b>		64294-95-7			
sevelamer	2-Propen-1-amine polymer with (chloromethyl)oxirane, hydrochloride [CAS]	152751-57-0 52757-95-6	US 5496545	Urological	Renal failure
sevoflurane	Propane, 1,1,1,3,3,3-hexafluoro-2-(fluoromethoxy)- [CAS]	28523-86-6	DE 1954268	Anaesthetic, inhalation	Anaesthesia
SG-210	2H-1,4-Benzothiazine-2-acetic acid, 3,4-dihydro-3-oxo-4-[(4,5,7-trifluoro-2-benzothiazolyl)methyl]- [CAS]	143162-65-6		Symptomatic antidiabetic	Neuropathy, diabetic
sibutramine	Cyclobutanemethanamine, 1-(4-chlorophenyl)-N,N-dimethyl-Alpha-(2-methylpropyl)- [CAS]	106650-56-0 84485-00-7	GB 2098602	Anorectic/Antiobesity	Obesity
siccanin	(4aS-(4aAlpha,6aAlpha,11bAlpha,13aR*,13bAlp ha))-1,2,3,4,4a,5,6a,11b,13b-decahydro-4,4,6a,9-tetramethyl-13H-benzo[a]furo[2,3,4-mn]xanthen-11-ol	22733-60-4	JP 37003548	Antifungal	
sildenafil	Piperazine, 1-[(3-(4,7-dihydro-1-methyl-7-oxo-3-propyl-1H-pyrazolo(4,3-d)pyrimidin-5-yl)-4-ethoxyphenyl)sulfonyl]-4-methyl, 2-hydroxy-1,2,3-propanetricarboxylate- (1:1) [CAS]	171599-83-0 139755-83-2	WO 9428902	Male sexual dysfunction	Impotence
silodosin	1H-Indole-7-carboxamide, 2,3-dihydro-1-(3-hydroxypropyl)-5-[(2R)-2-[2-(2,2,2-trifluoroethoxy)phenoxy]ethyl]amino]propyl]- [CAS]	160970-54-7	EP 600675	Urological	Dysuria
<b>Silver Lactate</b>		128-00-7			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
<b>Silver Picrate</b>		146-84-9			
silver sulfadiazine	N'-2-pyrimidinylsulfanilamide monosilver salt	22199-08-2 68-35-9		Anti-infective, other	Infection, general
<b>Simetride</b>		154-82-5			
<b>Simfibrate</b>		14929-11-4			
simvastatin	Butanoic acid, 2,2-dimethyl-, 1,2,3,7,8,8a-hexahydro-3,7-dimethyl-8-[2-(tetrahydro-4-hydroxy-6-oxo-2H-pyran-2-yl)ethyl]-1-naphthalenyl ester, [1S-[1 $\alpha$ ,3 $\alpha$ ,7 $\beta$ ,8 $\beta$ (2S*,4S*),8a $\beta$ ]]-[CAS]	79902-63-9	US 4444784	Hypolipemic/Antiatherosclerosis	Hyperlipidaemia, general
<b>Sincalide</b>		25126-32-3			
<b>Sintropium Bromide</b>		79467-19-9			
<b>Sisomicin</b>		32385-11-8			
sitafloxacin	3-Quinolincarboxylic acid, 7-(7-amino-5-azaspiro[2.4]hept-5-yl)-8-chloro-6-fluoro-1-(2-fluorocyclopropyl)-1,4-dihydro-4-oxo-, [1R-[1 $\alpha$ pha(S*),2 $\alpha$ pha]]-, hydrate	127254-12-0	EP 341493	Quinolone antibacterial	Infection, general
sitamaquine	1,6-Hexanediamine, N,N-diethyl-N'-(6-methoxy-4-methyl-8-quinolinyl)- [CAS]	5330-29-0 57695-04-2		Protozoacide	Infection, leishmaniasis
sitaxsentan	N-(4-Chloro-3-methyl-5-isoxazolyl)-2-[[4,5-(methylenedioxy)-o-tolylacetyl]-3-thiophenesulfonamide	184036-34-8	US 5464853	Antihypertensive, other	Hypertension, pulmonary
sivelestat	Glycine, N-[2-[[[4-(2,2-dimethyl-1-oxopropoxy)phenyl]sulfonyl]amino]benzoyl]- [CAS]	127373-66-4	EP 347168	Respiratory	Systemic inflammatory response syndrome
SJA-6017	Butanamide, 2-[[[4-(fluorophenyl)sulfonyl]amino]-N-[(1S)-1-formyl-3-methylbutyl.]-3-methyl-, (2S)-[CAS]	190274-53-4	EP 771565	Ophthalmological	Cataract
SL-65-1498	6-Fluoro-9-methyl-2-phenyl-4-pyrrolidin-1-ylcarbonyl)-2,9-dihydro-1H-pyrido[3,4-b]indole-1-one		EP 607076	Anxiolytic	Anxiety, general



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SLV-306	(3S,2R)-3-[1-[2'-(Ethoxycarbonyl)-4'-phenyl-butyl]-cyclopentan-1-carbonylamino]-2,3,4,5-tetrahydro-2-oxo-1H-benzapin-1-acetic acid			Antihypertensive, diuretic	Hypertension, general
SLV-308	2(3H)-Benzoxazolone, 7-(4-methyl-1-piperazinyl)-, monohydrochloride	269718-83-4		Antiparkinsonian	Parkinson's disease
Sm153 lexidronam	Samarate(5-)-153Sm, (((1,2-ethanediybis(nitriobis(methylene)))tetrakis(phosphonato))(8-)-N,N',OP,OP',OP'',OP'''), pentasodium, (OC-6-21)- [CAS]	160369-78-8		Analgesic, other	Pain, cancer
S-Methylmethionine		4727-40-6			
SMP-300	N-(Aminiminomethyl)-11-chloro-5,6,7,8-tetrahydro-8-oxo-4H-pyrrolo[3,2,1-kl][1]benzazocine-2-carboxamide monomethanesulfonate monohydrate			Antianginal	Angina, general
SN-38	(4S)-4,7,11-triethyl-3,4,12,14-tetrahydro-4,10-dihydroxy-3,14-dioxo-1H-pyrano[3',4':6,7]indolizino[1,2-b]quindin-9-yl	100286-90-6		Formulation, optimized, liposomes	Cancer, colorectal
SNAP-7941	((+)-methyl (4S)-3-(((3-{4-[3-(acetylamino)phenyl]-1-piperidiny]propyl}amino) carbonyl)-4-(3,4-difluorophenyl)-6-(methoxymethyl)-2-oxo-1,2,3,4-tetrahydro-5-pyrimidinecarboxylate hydrochloride)			Anxiolytic	Anxiety, general
SOA-132	2-Naphthalenecarboxamide, N-[2-{4-(diphenylmethoxy)-1-piperidiny]ethyl]-3-hydroxy-5-(3-pyridinylmethoxy)- [CAS]	143964-80-1		Formulation, inhalable, topical	Asthma

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soblidotin	L-valinamide, N,N-dimethyl-L-valyl-N-[2-methoxy-4-[2-[1-methoxy-2-methyl-3-oxo-3-[(2-phenylethyl)amino]propyl]-1-pyrrolidinyl]-1-(2-methylpropyl)-4-oxobutyl]-N-methyl-, [2S-[1[1R*(R*),2S*],2R*(1S*,2S*)]]- [CAS]	149606-27-9	WO 9303054	Anticancer, other	Cancer, lung, non-small cell
Sobrerol		498-71-5			
sobuzoxane	Carbonic acid, 1,2-ethanediylbis[(2,6-dioxo-4,1-piperazinediyl)methylene]bis(2-methylpropyl) ester [CAS]	98631-95-9	EP 140327	Anticancer, other	Cancer, lymphoma, T-cell
Sodium Arsanilate		127-85-5			
Sodium Arspenamine		1936-28-3			
Sodium Chloride					
Sodium Dibunate		14992-59-7			
Sodium Folate		6484-89-5			
Sodium Formaldehydesulfoxylate		149-44-0			
Sodium Glycerophosphate		1334-74-3			
Sodium Hyaluronate					
Sodium Iodomethamate		519-26-6			
Sodium Nitrite		7632-00-0			
Sodium Nitroprusside		14402-89-2			
sodium oxybate	Butyric acid, 4-hydroxy monosodium salt [CAS]	502-85-2		Psychostimulant	Narcolepsy
Sodium Phenolsulfonate		1300-51-2			
sodium phenylbutyrate	Butyric acid, 4-phenyl-, sodium salt- [CAS]	1716-12-7		Formulation, other	Hyperammonaemia

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
sodium phosphate	Sodium phosphate monobasic anhydrous		US 6162464	Formulation, oral, other	Surgery adjunct
sodium prasterone sulfate	3 $\beta$ -hydroxy-5-androsten-17-one(sodium sulfate dihydrate)		EP 380036	Formulation, mucosal, topical	Labour, induction
<b>Sodium Propionate</b>		137-40-6			
sodium salicylate	Benzoic acid, 2-hydroxy-, monosodium salt [CAS]	54-21-7		Formulation, oral, solubility-enhanced	Pain, general
<b>Sodium Tetradecyl Sulfate</b>		139-88-8			
sofalcone	Acetic acid, [5-[(3-methyl-2-butenyl)oxy]-2-[3-[4-[(3-methyl-2-butenyl)oxy]phenyl]-1-oxo-2-propenyl]phenoxy]- [CAS]	64506-49-6	GB 1523241	Anticancer	
<b>Solasulfone</b>		133-65-3			
solifenacin	Butanedioic acid compd with (1S)-(3R)-1-azabicyclo(2.2.2)oct-3-yl 3,4-dihydro-1-phenyl-2(1H)-isoquinolinecarboxylate (1:1) [CAS]	242478-38-2		Urological	Overactive bladder
Sorbinic acid	D-Glucitol, hexa-3-pyridinecarboxylate [CAS]	6184-06-1	BE 883352	Hypolipemic/Antiatherosclerosis	
<b>Sorbitol</b>		50-70-4			
<b>Sorivudine</b>		77181-69-2			
sotalol	Methanesulfonamide, N-[4-[1-hydroxy-2-[(1-methylethyl)amino]ethyl]phenyl]- [CAS]	3930-20-9 959-24-0		Antiarrhythmic	
<b>Soterenol</b>		13642-52-9			
<b>Sozoiodolic Acid</b>		554-71-2			
sparglumic acid	L-Glutamic acid, N-(N-acetyl-L-Alpha-aspartyl)- [CAS]	3106-85-2 80619-64-3		Formulation, mucosal, topical	Conjunctivitis
sparfloxacin	3-Quinolonecarboxylic acid, 5-amino-1-cyclopropyl-7-(3,5-dimethyl-1-piperazinyl)-6,8-difluoro-1,4-dihydro-4-oxo-, cis- [CAS]	110871-86-8	EP 221463	Quinolone antibacterial	Infection, respiratory tract, general
<b>Sparteine</b>		90-39-1			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
SPA-S-843	Candicin D, 18-decarboxy-40-demethyl-3,7-dideoxo-N3'-((dimethylamino)acetyl)-18-(((2-(dimethylamino)ethyl)amino)carbonyl)-3,7-dihydroxy-N47-methyl-5-oxo cyclic 15,19-hemiacetal, comp with L-ascorbic acid (1:2) [CAS]	202748-83-2	US 5298495	Antifungal	Infection, fungal, general
Spasmolytol		25333-96-4			
SPD-754	2(1H)-Pyrimidinone, 4-amino-1-(2-(hydroxymethyl)-1,3-oxathiolan-4-yl)- (2R-cis)-	160707-69-7	US 6228860	Antiviral, anti-HIV	Infection, HIV/AIDS
Spectinomycin		1695-77-8			
SPI-339	4-[3-(4-Oxo-4,5,6,7-tetrahydroindol-yl)propionylamino]benzoic acid ethyl ester			Cognition enhancer	Alzheimer's disease
Spiperone		749-02-0			
spirapril	1,4-Dithia-7-azaspiro[4.4]nonane-8-carboxylic acid, 7-[2-[[1-(ethoxycarbonyl)-3-phenylpropyl]amino]-1-oxopropyl]-, [8S-[7R*(R*),8R*]]- [CAS]	83647-97-6	EP 50800	Antihypertensive, renin system	Hypertension, general
Spirogermanium		41992-23-8			
spironolactone	Pregn-4-ene-21-carboxylic acid, 7-(acetylthio)-17-hydroxy-3-oxo-, Gamma-lactone, (7Alpha,17Alpha)- [CAS]	52-01-7	EP 124147	Formulation, dermal, topical	Acne
SR-121463	Benzamide, N-(1,1-dimethylethyl)-4-[[cis-5'-ethoxy-4-[2-(4-morpholinyl)ethoxy]-2'-oxospiro[cyclohexane-1,3'-[3H]indol]-1'(2'H)-yl]sulfonyl]-3-methoxy- [CAS]	185913-78-4	WO 9715556	Cardio stimulant	Heart failure
SR-144190	Morpholine, 4-benzoyl-2-(3,4-difluorophenyl)-2-[2-[4-[[[(dimethylamino)carbonyl]amino]-4-phenyl]-1-piperidinyl]ethyl]-, (2R)- [CAS]	201152-86-5	WO 9623787	Anxiolytic	Anxiety, general

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SR-146131	1H-Indole-1-acetic acid, 2-[[[4-(4-chloro-2,5-dimethoxyphenyl)-5-(2-cyclohexylethyl)-2-thiazolyl]amino]carbonyl]-5,7-dimethyl-[CAS]	221671-61-0	WO 9915525	Anorectic/Antiobesity	Obesity
SR-271425	N-[1-[2-(diethylamino)ethylamino]-7-methoxy-9-oxo-9H-thioxanthene-4-ylmethyl]formamide			Anticancer, alkylating	Cancer, general
SR-27897	1H-Indole-1-acetic acid, 2-[[[4-(2-chlorophenyl)-2-thiazolyl]amino]carbonyl]-[CAS]	136381-85-6	EP 432040	Anticancer, other	Cancer, pancreatic
SR-31747	Cyclohexanamine, N-(3-(3-chloro-4-cyclohexylphenyl)-2-propenyl)-N-ethyl-, hydrochloride, (Z)- [CAS]	132173-07-0	EP 376850	Anticancer, other	Cancer, myeloma
SR-58611	Acetic acid, [[(7S)-7-[[[(2R)-2-(3-chlorophenyl)-2-hydroxyethyl]amino]-5,6,7,8-tetrahydro-2-naphthalenyl]oxy]-ethyl ester, hydrochloride [CAS]	121524-09-2	EP 303546	GI inflammatory/bowel disorders	Irritable bowel syndrome
SS732	(R)-(-)-2-(2,4-difluorophenyl)-1-(ethylsulfonyl)-1,1-difluoro-3-(1H-1,2,4-triazol-1-yl)-2-propanol		US 5385900	Formulation, mucosal, topical	Infection, ocular
SS-750	Propanamide, N, N'(dithiodi-2,1-ethanedyl)bis(3-amino)- [CAS]	646-08-2	US 6083968	Antifungal	Infection, fungal, general
$\beta$ -alethine	(2S,4R)-1-[5-chloro-1-[(2,4-dimethoxyphenyl)sulfonyl]-3-(2-methoxyphenyl)-2-oxo-2,3-dihydro-1H-indol-3-yl]-4-hydroxy-N,N-dimethyl-2-pyrrolidine carboxamide			Anticancer, immunological	Cancer, myeloma
SSR-149415	2-(7-chloro-5-methyl-4-oxo-3-phenyl-4,5-dihydro-3H-pyridazino[4,5-b]indol-1-yl)-N,N-dimethylacetamide		WO 0155130	Antidepressant	Depression, general
SSR-180575				Neuroprotective	Unspecified

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SSR-181507	(3-Exo)-8-benzoyl-N-[(2S)-7-chloro-2,3-dihydro-1,4-benzodioxin-2-yl]methyl]-8-azabicyclo[3.2.1]octane-3-methanamine HCl		US 6221879	Neuroleptic	Schizophrenia
SSR-591813	(5aS,8S,10aR)-5a,6,9,10-tetrahydro,7H,11H-8,10a-methanopyrido[2',3':5,6]pyrano[2,3-d]azepine			Dependence treatment	Addiction, nicotine
SST-101	D-Glucitol, 1,4:3,6-dianhydro-, dinitrate [CAS]	87-33-2		Formulation, transdermal, other	Angina, general
SSY-726	(-)-(R)-3-Methyl-3-(methylsulfonyl)-1-(1,2,4-triazol-1-yl)-2-[4-(trifluoromethyl)phenyl]-2-butanol		US 5147886	Antifungal	Infection, fungal, general
ST-200	1-Propanaminium, 2-(acetyloxy)-3-carboxy-N,N,N-trimethyl-, chloride, (R)- [CAS]	5080-50-2	DE 3015635	Cognition enhancer	Dementia, senile, general
stachyflin			WO 9711947	Antiviral, other	Infection, influenza virus
Stallimycin		636-47-5			
Stampidine			US 6350736	Antiviral, anti-HIV	Infection, HIV/AIDS
Stannous Pyrophosphate		15578-26-4			
stannosporfin	(OC-6-13)-Dihydrogen dichloro[7,12-diethyl-3,8,13,17-tetramethyl-21H,23H-porphine-2,18-dipropanoate(4-)-N21,N22,N23,N24]stannate(2-)	106344-20-1		Hepatoprotective	Hyperbilirubinaemia
Stanolone		521-18-6			
Stanozolol		10418-03-8 (2'H form); 302-96-5 (1'H form)			
Staph aureus ther			US 6376652	Genomics-based drug discovery	Infection, MRSA
STAT4 inhibitors			WO 9629341	Immunosuppressant	Unspecified



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stavudine	Thymidine, 2',3'-dideoxy-3'-deoxy- [CAS]	3056-17-5	EP 501511	Antiviral, anti-HIV	Infection, HIV/AIDS
<b>Stenbolone</b>		5197-58-0			
stepronin	Glycine, N-[1-oxo-2-[(2-thienylcarbonyl)thio]propyl]- [CAS]	72324-18-6	US 4242354	Antitussive	Cough
<b>Stibocaptate</b>		27279-76-1			
<b>Stibophen</b>		15489-16-4			
<b>Stilbamidine</b>		122-06-5			
stiripentol	1-Penten-3-ol, 1-[(1',3-benzodioxol(5-y))-4,4-dimethyl]- [CAS]	49763-98-4		Antiepileptic	Epilepsy, general
<b>Streptodornase</b>		37340-82-2			
<b>Streptomycin</b>		57-92-1			
<b>Streptonicozid</b>		5667-71-0			
<b>Streptonigrin</b>		3930-19-6			
<b>Streptozocin</b>		18883-66-4			
strontium ranelate	3-Thiopheneacetic acid, 5-[bis(carboxymethyl)amino]-2-carboxy-4-cyano-, strontium salt (1:2)- [CAS]	135459-87-9	EP 415850	Osteoporosis treatment	Osteoporosis
strontium-89 chloride	Strontium chloride (89SrCl <sub>2</sub> ) [CAS]	38270-90-5		Analgesic, other	Pain, cancer
<b>Succimer</b>		304-55-2			
<b>Succinimide</b>		123-56-8			
<b>Succinylcholine</b>		55-94-7			
<b>Succinylcholine</b>		71-27-2			
<b>Succinylsulfathiazole</b>		116-43-8			
<b>Succisulfone</b>		5934-14-5			
<b>Suclofenide</b>		30279-49-3			
sucralfate	Aluminium, hexadeca-μ-hydroxytetraacosahydroxy(μ8-(1,3,4,6-tetra-O-sulfo-β-D-fructofuranosyl-Alpha-D-glucopyranoside tetrakis(hydrogen sulfato)(8-)))hexadeca- [CAS]	54182-58-0	JP 58208233	Antilucer, Formulation, oral, other	Ulcer, general
sufentanil	Propanamide, N-[4-(methoxymethyl)-1-[2-(2-thienyl)ethyl]-4-piperidinyl]-N-phenyl- [CAS]	56030-54-7	US 3998834	Analgesic, other, formulation implant	Pain, general

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sulbactam	4-Thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid, 3,3-dimethyl-7-oxo-, 4,4-dioxide, (2S-cis)- [CAS]	68373-14-8	GB 2000138	Antibiotic, other	Infection, general
sulbactam + ampicillin		117060-71-6	US 4234579	Antibiotic, other	Infection, general
sulbenicillin	4-Thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid, 3,3-dimethyl-7-oxo-6-[[phenylsulfoacetyl]amino]-, [2S-[2Alpha,5Alpha,6S(S*)]]- [CAS]	28002-18-8 41744-40-5	GB 1289358	Penicillin, injectable	Infection, pseudomonal
<b>Sulbentine</b>		350-12-9			
sulbutiamine	Propanoic acid, 2-methyl-, dithiobis[3-{1-[[[(4-amino-2-methyl-5-pyrimidinyl)methyl]formylamino]ethylidene]-3,1-propanediyl] ester [CAS]	3286-46-2 67-16-3		Neurological	Unspecified
sulconazole	1H-Imidazole, 1-[2-[[[(4-chlorophenyl)methyl]thio]-2-(2,4-dichlorophenyl)ethyl]-, (+/-)- [CAS]	61318-90-9 61318-91-0	US 4055652	Antifungal	Infection, fungal, general
<b>Sulesomab</b>		167747-19-5			
<b>Sulfabenzamide</b>		127-71-9			
<b>Sulfacetamide</b>		144-80-9			
<b>Sulfachlorpyridazine</b>		80-32-0			
<b>Sulfachrysoidine</b>		485-41-6			
<b>Sulfacytine</b>		17784-12-2			
<b>Sulfadiazine</b>		68-35-9			
<b>Sulfadicroamide</b>		115-68-4			
<b>Sulfadimethoxine</b>		122-11-2			
<b>Sulfadoxine</b>		2447-57-6			
<b>Sulfaethidole</b>		94-19-9			
<b>Sulfaguanidine</b>		57-67-0			
<b>Sulfaguanole</b>		27031-08-9			
<b>Sulfalene</b>		152-47-6			
<b>Sulfaloxic Acid</b>		14376-16-0			
<b>Sulfamerazine</b>		127-79-7			
<b>Sulfameter</b>		651-06-9			
<b>Sulfamethazine</b>		57-68-1			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Sulfamethizole		144-82-1			
Sulfamethomidine		3772-76-7			
Sulfamethoxazole		723-46-6			
Sulfamethoxypyridazine		80-35-3			
Sulfametrole		32909-92-5			
Sulfamidochrysoidine		103-12-8			
Sulfamoxole		729-99-7			
Sulfanilamide		63-74-1			
Sulfanilic Acid		121-57-3			
Sulfanilylurea		547-44-4			
Sulfaperine		599-88-2			
Sulfaphenazole		526-08-9			
Sulfaproxyline		116-42-7			
Sulfapyrazine		116-44-9			
Sulfapyridine		144-83-2			
Sulfarside		1134-98-1			
Sulfarsphenamine		618-82-6			
sulfasalazine	Benzoic acid, 2-hydroxy-5-[[4-[(2-pyridinylamino)sulfonyl]phenyl]azo]- [CAS]	599-79-1		Formulation, oral, enteric-coated	Arthritis, rheumatoid
Sulfasomizole		632-00-8			
Sulfasymazine		1984-94-7			
Sulfathiazole		72-14-0			
Sulfathiourea		515-49-1			
Sulfinalol		66264-77-5			
Sulfinyprazone		57-96-5			
Sulfiram		95-05-6			
Sulfisomidine		515-64-0			
Sulfisoxazole		127-69-5			
Sulfobromophthalein		71-67-0			
SulfonethyImethane		76-20-0			

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Sulfoniazide		3691-81-4			
Sulfonmethane		115-24-2			
Sulforidazine		14759-06-9			
Sulfoxone		144-75-2			
sulindac	cis-5-fluoro-2-methyl-1-[(p-methylsulfinyl)benzylidene]indene-3-acetic acid	38194-50-2	US 3725548	Anti-inflammatory	Inflammation, general
Sulisatin		54935-03-4			
Sulisobenzone		4065-45-6			
Sulmarin		29334-07-4			
Sulmazole		73384-60-8			
Suloctidil		54063-56-8			
Sulphan Blue		129-17-9			
sulpiride	Benzamide, 5-(aminosulfonyl)-N-[(1-ethyl-2-pyrrolidinyl)methyl]-2-methoxy-[CAS]	15676-16-1		Alimentary/Metabolic, other	
sulprostone	5-Heptenamide, 7-[3-hydroxy-2-(3-hydroxy-4-phenoxy-1-butenyl)-5-oxocyclopentyl]-N-(methylsulfonyl)-, [1R-[1Alpha(Z),2S(1E,3R*),3Alpha]]- [CAS]	60325-46-4	US 4024179	Prostaglandin	Abortion
sultamicillin	4-Thia-1-azabicyclo(3.2.0)heptane-2-carboxylic acid, 6-((aminophenylacetyl)amino)-3,3-dimethyl-7-oxo-, (((3,3-dimethyl-7-oxo-4-thia-1-azabicyclo(3.2.0)hept-2-yl)carbonyl)oxy)methyl ester, S, S-dioxide, (2S-(2.alpha.(2R*,5S*),5.alpha.,6.beta.(S*))-[CAS]	117060-71-6 76497-13-7	GB 2044255	Penicillin, oral	Infection, general
Sulthiame		61-56-3			
sultopride	Benzamide, N-[(1-ethyl-2-pyrrolidinyl)methyl]-5-(ethylsulfonyl)-2-methoxy-[CAS]	53583-79-2	FR M5916	Neuroleptic	Psychosis, general
Sultosilic Acid		57775-26-5			

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sumanirole	4H-imidazo[4,5,1-j]quinolin-2(1H)-one, 5,6-dihydro-5-(methylamino)-, (5R)-, (2Z)-2-butenedioate (1:1) [CAS]	179386-44-8	WO 9514020	Antiparkinsonian	Parkinson's disease
sumatriptan	1H-indole-5-methanesulfonamide, 3-[2-(dimethylamino)ethyl]-N-methyl-, butanedioate (1:1)- [CAS]	103628-46-2 103628-48-4	EP 147107	Antimigraine	Migraine
SUN-N8075	1-(4-amino-2,3,5-trimethylphenoxy)-3-(4-[(4-fluorobenzyl)phenyl]piperazin-1-yl)propan-2(s)-ol dimethanesulfonate				
suplatast	Sulfonium, [3-[[4-(3-ethoxy-2-hydroxypropoxy)phenyl]amino]-3-oxopropyl]dimethyl-, [CAS]	94055-76-2	JP 59167564	Neuroprotective	Infarction, cerebral
Suprofen		40828-46-4			
Suramin		129-46-4			
surfactant TA	Beractant [CAS]	108778-82-1	WO 9117766	Lung Surfactant	Respiratory distress syndrome, general
Suriclone		53813-83-5			
Suxibuzone		27470-51-5			
SYM-1010					
SYM-2081	L-Glutamic acid, 4-methyl-, (4R)- [CAS]	31137-74-3	US 5830998	Antiepileptic	Epilepsy, general
	4-(Aminophenyl)-1-methyl-6,7-(methylenedioxy)-N-butyl-1,2-dihydrophthalazine-2-carboxamide			Analgesic, other	Pain, general
SYM-2207				Neuroprotective	Ischaemia, cerebral
Symclosene		87-90-1			
Syn-1253	1-cyclopropyl-6-fluoro-8-methoxy-7-[3-(4-methyl-1,2,3-triazol-1-yl)pyrrolidin-1-yl]-4-oxo-1,4-dihydroquinoline 3-carboxylic acid			Quinolone antibacterial	Infection, peritoneum
Syn-2190	1-Azetidinesulfonic acid, 3-[[[(2E)-[[[(1,4-dihydro-1,5-dihydroxy-4-oxo-2-pyridinyl)methoxy]imino]-2-thienylacetyl]amino]-2-methyl-4-oxo, (2S,3S)- [CAS]	214963-75-4	WO 9847895	Antibacterial, other	Infection, general

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Syn-2869	3H-1,2,4-Triazol-3-one, 4-(4-(4-((1R,2R)-2-(2,4-difluorophenyl)-2-hydroxy-1-methyl-3-(1H-1,2,4-triazol-1-yl)propyl)-1-piperazinyl)phenyl)-2,4-dihydro-2((4-(trifluoromethoxy)phenyl)methyl)- [CAS]	210562-98-4	US 6153616	Antifungal	Infection, Aspergillus
Synephrine		94-07-5			
Syrosingopine		84-36-6			
T-1095	1-Propanone, 3-(5-benzofuranyl)-1-(2-hydroxy-6-((6-O-methoxycarbonyl)-β-D-glucopyranosyl)oxy)-4-methylphenyl- [CAS]	209746-59-8	EP 850948	Antidiabetic	Diabetes, general
T-1249	L-Phenylalaninamide, N-acetyl-L-tryptophyl-L-glutaminy-L-Alpha-glutamyl-L-tryptophyl-L-Alpha-glutamyl-L-glutaminy-L-lysyl-L-isoleucyl-L-threonyl-L-alanyl-L-leucyl-L-leucyl-L-Alpha-glutamyl-L-glutaminy-L-alanyl-L-glutaminy-L-isoleucyl-L-glutaminy-L-glutaminy-L-Alpha-glutamyl-L-lysyl-L-Alpha-glutamyl-asparaginy-L-tyrosyl-L-Alpha-glutamyl-L-leucyl-L-glutaminy-L-lysyl-L-Alpha-glutamyl-L-leucyl-L-lysyl-L-tryptophyl-L-ananyl-L-seryl-L-leucyl-L-tryptophyl-L-Alpha-glutamyl-L-tryptophyl- [CAS]	251562-00-2	WO 9959615	Antiviral, anti-HIV	Infection, HIV/AIDS
T-3912	1-cyclopropyl-8-methyl-7-[5-methyl-6-(methylamino)-3-pyridinyl]-4-oxo-1,4-dihydro-3-quinolinecarboxylic acid			Quinolone antibacterial	Infection, dermatological
T-588	Benzo(b)thiophene-5-methanol, Alpha-((2-(diethylamino)ethoxy)methyl)-, hydrochloride, (R)- [CAS]	142935-03-3	EP 565965	Cognition enhancer	Alzheimer's disease
T-67	Benzenesulfonamide, 2,3,4,5,6-pentafluoro-N-(3-fluoro-4-methoxyphenyl)- [CAS]	195533-53-0		Anticancer, other	Cancer, liver
T-82			US 5190951	Cognition enhancer	Alzheimer's disease



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TA-2005	2-(1H)-Quinolinone, 8-hydroxy-5-[(1-hydroxy-2-[[2-(4-methoxyphenyl)-1-methylethyl]amino]ethyl)-, monohydrochloride, [R-(R*,R*)]- [CAS]	137888-11-0	US 4579854	Antiasthma	Asthma
TA-2005	2-(1H)-Quinolinone, 8-hydroxy-5-[(1-hydroxy-2-[[2-(4-methoxyphenyl)-1-methylethyl]amino]ethyl)-, monohydrochloride, [R-(R*,R*)]- [CAS]		WO 189480	Formulation, inhalable, solution	Asthma
TA-993	1,5-Benzothiazepin-4(5H)-one, 3-(acetyloxy)-5-[2-(dimethylamino)ethyl]-2,3-dihydro-8-methyl-2-(4-methylphenyl)-, (2R,3R)-rel(-), (2Z)-2-butenedioate [CAS]	122024-98-0	JP 01045376	Antithrombotic	Peripheral vascular disease
tabimorelin	(R)-Alpha-[(E)-5-Amino-N,5-dimethyl-2-hexenamido]-N-methyl-N-[(R)-Alpha-(methylcarbamoyl)phenethyl]-2-naphthalenepropionamide	170851-70-4 193079-69-5		Releasing hormones	Growth hormone deficiency
tacalcitol	9,10-Secocholesta-5,7,10(19)-triene-1,3,24-triol, (1Alpha,3beta,5Z,7E,24R)- [CAS]	57333-96-7 93129-94-3	EP 129003	Antipsoriasis	Keratosis
tacedinaline	Benzamide, 4-(acetylamino)-N-(2-aminophenyl)- [CAS]	112522-64-2 1684-40-8	DE 3613571	Anticancer, other	Cancer, pancreatic
tacrine	9-Acridinamine, 1,2,3,4-tetrahydro- [CAS]	321-64-2	EP 332147	Cognition enhancer	Alzheimer's disease
Tacrolimus		104987-11-3			
tadalafil	Pyrazino(1',2':1,6)pyrido(3,4-b)indole 1,4-dione, 6-(1,3-benzodioxol-5-yl)-2,3,6,7,12,12a-hexahydro-2-methyl-, (6R-trans) [CAS]	171596-29-5	US 6143746	Male sexual dysfunction	Impotence
tafenoquine	1,4-Pentanediamine, N4-[2,6-dimethoxy-4-methyl-5-[3-(trifluoromethyl)phenoxy]-8-quinolinyl]- [CAS]	106635-80-7 106635-81-8 80065-55-0	US 4617394	Antimalarial	Infection, malaria
tafluposide		179067-42-6	WO 9612727	Anticancer, other	Cancer, general
TAK-375	(S)-N-[2-(1,6,7,8-Tetrahydro-2H-indeno-[5,4-b]furan-8-yl)]propionamide			Hypnotic/Sedative	Insomnia

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TAK-427	2-[6-[[3-[4-(Diphenylmethoxy)-piperidino]imidazo[1,2-b]pyridazin-2-yl]-2-methylpropionic acid dihydrate			Antipruritic/inflamm, allergic	Eczema, atopic
TAK-559	(E)-4-[4-[5-Methyl-2-phenyl-1,3-oxazo-4-yl)methoxy]benzyloxyimino]-4-phenylbutyric acid			Antidiabetic	Diabetes, general
Taka-Diastase		9001-19-8			
talampanel	7H-1,3-Dioxolo[4,5-h][2,3]benzodiazepine, 7-acetyl-5-(4-aminophenyl)-8,9-dihydro-8-methyl-, (8R)-[CAS]	161832-65-1	US 5639751	Antiepileptic	Epilepsy, general
Talampicillin		47747-56-8			
talaporfin	N-[[[(2S,3S)-18-Carboxy-2-(2-carboxyethyl)-13-ethyl-2,3-dihydro-3,7,12,17-tetramethyl-8-vinyl porphyrin-20-yl]acetyl]-L-aspartic acid	220201-34-3		Radio/chemosensitizer	Cancer, lung, general
Talastine		16188-61-7			
Talbutal		115-44-6			
Talinolol		57460-41-0			
talipexole	4H-Thiazolo[4,5-d]azepin-2-amine, 5,6,7,8-tetrahydro-6-(2-propenyl)- [CAS]	101626-70-4	DE 3503963	Antiparkinsonian	Schizophrenia
talnetant	4-Quinolincarboxamide, 3-hydroxy-2-phenyl-N-[(1S)-1-phenylpropyl]- [CAS]	36085-73-1	WO 9532948	GI inflammatory/bowel disorders	Irritable bowel syndrome
talniflumate	3-Pyridinecarboxylic acid, 2-[[3-(trifluoromethyl)phenyl]amino]-, 1,3-dihydro-3-oxo-1-isobenzofuran-1-yl ester [CAS]	174636-32-9	BE 858864	Anti-inflammatory	Inflammation, ocular
talitirelin	L-Prolinamide, N-[(hexahydro-1-methyl-2,6-dioxo-4-pyrimidinyl)carbonyl]-L-histidyl-, (S)- [CAS]	66898-62-2	JP 61033197	Neurological	Dyskinesia, general
tamoxifen	Ethanamine, 2-[4-(1,2-diphenyl-1-butenyl)phenoxy]-N,N-dimethyl-, (Z)-[CAS]	103300-74-9	US 4536516	Anticancer, hormonal	
		10540-29-1			

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tamsulosin	Benzenesulfonamide, 5-[2-[[2-(2-ethoxyphenoxy)ethyl]amino]propyl]-2-methoxy-, (R)- [CAS]	106133-20-4 80223-99-0	EP 34432	Prostate disorders	Benign prostatic hyperplasia
tandospirone	4,7-Methano-1H-isoindole-1,3(2H)-dione, hexahydro-2-[4-[4-(2-pyrimidinyl)-1-piperazinyl]butyl]-, (3aAlpha,4β,7β,7aAlpha)-, 2-hydroxy-1,2,3-propanetricarboxylate (1:1) [CAS]	112457-95-1 87760-53-0	EP 82402	Anxiolytic	Anxiety, general
Tannoform		9010-29-1			
Taprostene		108945-35-3			
tariquidar	3-Quinolincarboxamide, N-[2-[[[4-[2-(3,4-dihydro-6,7-dimethoxy-2(1H)-isoquinolinyl)ethyl]phenyl]amino]carbonyl]-4,5-dimethoxyphenyl]- [CAS]	206873-63-4	WO 9817648	Radio/chemosensitizer	Cancer, lung, non-small cell
TAS-103	6-[[2-(Dimethyl-amino)ethyl]amino]-3-hydroxy-7H-indeno[2,1-c]quinolin-7-one dihydrochloride	174634-09-4	WO 9532187	Anticancer, other	Cancer, lung, non-small cell
Tasosartan		145733-36-4			
Taurocholic Acid		81-24-3			
Taurolidine		19388-87-5			
tazanolast	Acetic acid, oxo[[3-(1H-tetrazol-5-yl)phenyl]amino]-, butyl ester [CAS]	82989-25-1	US 4778816	Antiasthma	
tazarotene	3-Pyridinecarboxylic acid, 6-[(3,4-dihydro-4,4-dimethyl-2H-1-benzothiopyran-6-yl)ethynyl]-, ethyl ester [CAS]	118292-40-3	EP 284288	Antipsoriasis	Psoriasis
Tazobactam		89786-04-9			
tazobactam + piperacillin			JP 58225091	Antibiotic, other	Infection, general
TBC-3711		374680-51-0		Cardiovascular	Heart failure
TCH-346	N-Methyl-N-propargyl-10-aminomethyl-dibenzo(b,f)oxepin			Neuroprotective	Amyotrophic lateral sclerosis
tebipenem	5-Hexenoic acid, 4-hydroxy-, polymer with 4-ethenyl-1H-imidazole [CAS]	82200-24-6		Beta-lactam antibiotic	Infection, streptococcal

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tecadenoson	Adenosine, N-((3R)-tetrahydro-3-furanyl)- [CAS]	204512-90-3	WO 9808855	Antiarrhythmic	Tachycardia, supraventricular
tecastemizole	1H-Benzimidazol-2-amine, 1-((4-fluorophenyl)methyl)-N-4-piperidinyl- [CAS]	75970-99-9	US 4219559	Antiallergic, non-asthma	Rhinitis, allergic, seasonal
<b>Technetium <sup>99m</sup>Tc</b>					
<b>Bicisate</b>		121281-41-2			
<b>Technetium <sup>99m</sup>Tc</b>					
<b>Mertiatide</b>		125224-05-7; 104348-91-6			
<b>Technetium <sup>99m</sup>Tc</b>					
<b>Sestamibi</b>		109581-73-9			
<b>Technetium <sup>99m</sup>Tc</b>					
<b>Teboroxime</b>		104716-22-5			
<b>Teclothiazide</b>		4267-5-4			
<b>Teclozan</b>		5560-78-1			
tedisamil	Spiro[cyclopentane-1,9'-[3,7]diazabicyclo[3.3.1]nonane], 3',7'-bis(cyclopropylmethyl)- [CAS]	90961-53-8	EP 102833	Antiarrhythmic	Fibrillation, atrial
<b>Teflurane</b>		124-72-1			
tegafur	2,4-(1H,3H)-Pyrimidinedione, 5-fluoro-1-(tetrahydro-2-furanyl)- [CAS]	17902-23-7	GB 1168391	Anticancer, antimetabolite	Cancer, general
tegafur + uracil	2,4-(1H,3H)-Pyrimidinedione, 5-fluoro-1-(tetrahydro-2-furanyl)-, mixt. with 2,4-(1H,3H)-pyrimidinedione- [CAS]	74578-38-4	EP 224885	Anticancer, antimetabolite	Cancer, breast
tegasero	Hydrazinecarboximidamide, 2-((5-methoxy-1H-indol-3-yl)methylene)-N-pentyl-, (Z)-2-butenedioate [CAS]	189188-57-6 145158-71-0		GI inflammatory/bowel disorders	Irritable bowel syndrome
<b>Teicoplanin</b>		61036-64-4			
telbivudine	β-L-2'-deoxythymidine	3424-98-4		Antiviral, other	Infection, hepatitis-B virus
<b>Telenzepine</b>		80880-90-6			

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telithromycin	3-De((2,6-dideoxy-3-C-methyl-3-O-methyl-Alpha-L-ribo-hexopyranosyl)oxy)-11,12-dideoxy-6-O-methyl-3-oxo-12,11-(oxycarbonyl)((4-(4-(3-pyridinyl)-1H-imidazol-1-yl)butyl)imino))- [CAS]	191114-48-4	EP 680967	Macrolide antibiotic	Infection, respiratory tract, general
telmestine	3,4-Thiazolidinedicarboxylic acid, 3-ethyl ester, (R)- [CAS]	122946-43-4		COPD treatment	Bronchitis, chronic
telmisartan	(1,1'-Biphenyl)-2-carboxylic acid, 4'-((1,4-dimethyl-2'-propyl(2,6'-bi-1H-benzimidazol)-1'-yl)methyl)- [CAS]	144701-48-4	EP 502314	Antihypertensive, renin system	Hypertension, general
telomerase inhbs			WO 9941261	Anticancer, other	Cancer, general
temazepam	7-chloro-1,3-dihydro-3-hydroxy-1-methyl-5-phenyl-2H-1,4-benzodiazepin-2-one	846-50-4	US 3197467	Hypnotic/Sedative	Insomnia
temiverine	Benzeneacetic acid, Alpha-cyclohexyl-Alpha-hydroxy-, 4-(diethylamino)-1,1-dimethyl-2-butynyl ester, [CAS]	129927-33-9	GB 2222828	Urological	Pollakisuria
temocapril	1,4-Thiazepine-4(5H)-acetic acid, 6-[[1-(ethoxycarbonyl)-3-phenylpropyl]amino]tetrahydro-5-oxo-2-(2-thienyl)-, [2S-[2Alpha,6B(R*)]]- [CAS]	102090-90-4 110221-44-8 111902-57-9	US 4495188	Antihypertensive, renin system	Hypertension, general
Temocillin		66148-78-5			
temoporfin	Phenol, 3,3',3''-(2,3-dihydro-21H,23H-porphine-5,10,15,20-tetrayl)tetrakis- [CAS]	122341-38-2	EP 337601	Radio/chemosensitizer	Cancer, head and neck
temozolomide	Imidazo[5,1-d]-1,2,3,5-tetrazine-8-carboxamide, 3,4-dihydro-3-methyl-4-oxo- [CAS]	85622-93-1	DE 3231255	Anticancer, alkylating	Cancer, brain, general
tenatoprazole	1H-imidazo(4,5-b)pyridine, 5-methoxy-2-(((4-methoxy-3,5-dimethyl-2-pyridinyl)methyl)sulfinyl)- [CAS]	113712-98-4	US 4808596	Antilulcer	Ulcer, gastric
Tenecteplase		191588-94-0			
Tenidap		120210-48-2			

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teniposide	Furo[3',4':6,7]naphtho[2,3-d]-1,3-dioxol-6(5aH)-one, 5,8,8a,9-tetrahydro-5-(4-hydroxy-3,5-dimethoxyphenyl)-9-[[4,6-O-(2-thienylmethylene)-β-D-glucopyranosyl]oxy], [5R-[5Alpha,5aβ,8aAlpha,9β(R*)]]- [CAS]	29767-20-2	US 3524844	Anticancer, other	Cancer, lymphoma, non-Hodgkin's
tenofovir	Phosphonic acid, (((1R)-2-(6-amino-9H-purin-9-yl)-1-methylethoxy)methyl)- [CAS]	147127-20-6		Antiviral, anti-HIV	Infection, HIV/AIDS
tenofovir disoproxil	2,4,6,8-tetraoxa-5-phosphanonedioic acid, 5-(2-(6-amino-9H-purin-9-yl)-1-methylethoxymethyl) bis(1-methylethyl)ester, 5-oxide (R)-, (E)-2-butenedioate	202138-50-9		Antiviral, anti-HIV	Infection, HIV/AIDS
Tenonitroazole	2H-Thieno[2,3-e]-1,2-thiazine-3-carboxamide, 4-hydroxy-2-methyl-N-2-pyridinyl-, 1,1-dioxide [CAS]	3810-35-3			
tenoxicam		59804-37-4	GB 1519811	Antiarthritic, other	
Tenuazonic Acid		610-88-8			
teprenone	5,9,13,17-Nonadecatetraen-2-one, 6,10,14,18-tetramethyl- [CAS]	3796-63-2 6809-52-5		Antitumor	
terazosin	Piperazine, 1-(4-amino-6,7-dimethoxy-2-quinazolinyl)-4-[(tetrahydro-2-furanyl)carbonyl]- [CAS]	63074-08-8 63590-64-7 70024-40-7	US 4112097	Antihypertensive, adrenergic	Hypertension, general
terbinafine	1-Naphthalenemethanamine, N-(6,6-dimethyl-2-hepten-4-ynyl)-N-methyl-, (E)- [CAS]	78628-80-5 91161-71-6	EP 24587	Antifungal	Infection, dermatological
terbutaline	1,3-Benzenediol, 5-[2-[(1,1-dimethylethyl)amino]-1-hydroxyethyl]- [CAS]	23031-25-6		Formulation, mucosal, topical	Dysmenorrhoea
terconazole	Piperazine, 1-[4-[[2-(2,4-dichlorophenyl)-2-(1H-1,2,4-triazol-1-ylmethyl)-1,3-dioxolan-4-yl]methoxy]phenyl]-4-(1-methylethyl)-, cis- [CAS]	67915-31-5	US 4358449	Antifungal	Vaginitis



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terfenadine	1-Piperidinebutanol, Alpha-[4-(1,1-dimethylethyl)phenyl]-4-(hydroxydiphenylmethyl)- [CAS]	50679-08-8	US 3878217	Antiallergic, non-asthma	
terguride	Urea, N,N-diethyl-N'-[(8 $\alpha$ ph $\alpha$ )-6-methylergolin-8-yl]- [CAS]	37686-84-3	EP 159522	Antiprolactin	Hyperprolactinaemia
Terlipressin		14636-12-5			
Terodiline		15793-40-5			
Terofenamate		29098-15-5			
Terpin		80-53-5			
	2-Propanol, 1-[(3,4-dihydro-2H-1-benzothioopyran-8-yl)oxy]-3-[(1,1-dimethylethyl)amino]-, hydrochloride, (+)- [CAS]	33580-30-2 83688-84-0 34784-64-0	GB 1308191	Antihypertensive, adrenergic	Hypertension, general
tert-butanol		75-85-4			
tert-Pentyl Alcohol	(2S)-2-ethoxy-3-[4-[2-[4-[(methylsulfonyl)oxy]phenyl]ethoxy]phenyl]propanoic acid				
tesaglitazar				Antidiabetic	Diabetes, Type II
tesmilifene	Ethanamine, N,N-Diethyl-2-[4-(phenylmethyl)phenoxy]- [CAS]	92981-78-7		Radio/chemosensitizer	Cancer, breast
Testolactone		968-93-4			
Testosterone	androst-4-en-3-one, 17-hydroxy-, (17 $\beta$ ) - [CAS]	58-22-0 5949-44-0		Formulation, transdermal, systemic	Hormone replacement therapy
tetrabamate		60763-47-5	DE 2748794	Anxiolytic	Addiction, alcohol
Tetrabarbital		76-23-3			
Tetrabenazine		58-46-8			
Tetracaine		136-47-0			
Tetrachloroethylene		127-18-4			
tetracine	Benzoic acid, 4-(butylamino)-, 2-(dimethylamino)ethyl ester [CAS]	94-24-6		Formulation, transdermal, systemic	Pain, general
	2-Naphthacenecarboxamide, 4-(dimethylamino)-1,4,4a,5,5a,6,11,12a-octahydro-3,6,10,12,12a-pentahydroxy-6-methyl-1,11-dioxo-, [4S-(4 $\alpha$ ph $\alpha$ ,4a $\alpha$ ,5a $\alpha$ ,6 $\alpha$ ,12a $\alpha$ )]- [CAS]				
tetracycline		60-54-8		Formulation, oral, other	Infection, oral

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Tetrahydrozoline		84-22-0			
Tetrandrine		518-34-3			
Tetrantoin		52094-70-9			
Tetrazepam		10379-14-3			
Tetrofosmin		127502-06-1			
tetroxoprim	2,4-Pyrimidinediamine, 5-[[3,5-dimethoxy-4-(2-methoxyethoxy)phenyl]methyl]-[CAS]	53808-87-0 74515-38-1	US 3992379	Trimethoprim and analogues	Infection, general
Tevenel®		4302-95-8			
tezacitabine	Cytidine, 2'-deoxy-2'-(fluoromethylene)-, (2E)- [CAS]	130306-02-4	US 5616702	Anticancer, antimetabolite	Cancer, colorectal
tezosentan	2-Pyridinesulfonamide, N-(6-(2-hydroxyethoxy)-5-(2-methoxyphenoxy)-2-(2-(1H-tetrazol-5-yl)-4-pyridinyl)-4-pyrimidinyl)-5-(1-methylethyl)- [CAS]	180384-57-0		Cardio stimulant	Oedema, general
thalidomide	1H-Indole-1,3(2H)-dione, 2-(2,6-dioxo-3-piperidinyl)- [CAS]	50-35-1		Dermatological	Infection, dermatological
Thenaldine		86-12-4			
Thenyldiamine		91-79-2			
Theobromine		83-67-0			
Theofibrate		54504-70-0			
theophylline	1H-Purine-2,6-dione, 3,7-dihydro-1,3-dimethyl- [CAS]	58-55-9 5967-84-0		Formulation, modified-release, other	Asthma
Thiabendazole		148-79-8			
Thiacetazone		104-06-3			
thiacymserine	Carbamic acid, [4-(1-methylethyl)phenyl]-, (3aS,8aS)-3,3a,8,8a-tetrahydro-3a,8-dimethyl-2H-thieno[2,3-b]indol-5-yl ester [CAS]	145209-51-4		Cognition enhancer	Alzheimer's disease
Thialbarbital		467-36-7			
Thiamine		59-43-8			
Thiamine		154-87-0			
Thiamine		67-16-3			
Thiamiprine		5581-52-2			

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API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Thiamphenicol		15318-45-3			
Thiamylal		77-27-0			
Thiazesim		5845-26-1			
Thiazinamium		58-34-4			
Thiazolinobutazone		54749-86-9			
Thiazolsulfone		473-30-3			
Thibenzazoline		6028-35-9			
Thiethylperazine		1420-55-9			
Thimerfonate		5964-24-9			
Thimerosal		54-64-8			
Thiobarbital		77-32-7			
Thiobutabarbital		2095-57-0			
Thiocarbamizine		91-71-4			
Thiocarbarsone		120-02-5			
Thiocolchicine		2730-71-4			
Thiocresol		26445-03-4			
Thioctic Acid		62-46-4			
Thioglycerol		96-27-5			
Thioguanine		154-42-7			
Thioimreg	L-Thiotyrosinyl-glycyl-glycine			Anticancer, immunological	Cancer, general
Thiopental		71-73-8			
Thiopropazate		84-06-0			
Thiopropazine		316-81-4			
Thioridazine		50-52-2			
Thiothixene		5591-45-7			
Thiovir	Thiophosphonoformic acid			Antiviral, anti-HIV	Infection, HIV/AIDS
Thiphenamil		82-99-5			
Thiram		137-26-8			
Thonzylamine		63-56-9			
Thozalinone		655-05-0			
Thromboplastin		9035-58-9			

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Thurfyl Nicotinate		70-19-9			
thymectacin			US 6245750	Anticancer, other	Cancer, colorectal
Thymol		89-83-8			
Thymopentin		69558-55-0			
Thymyl N-		578-20-1			
Isoamylcarbamate					
Thyropropic Acid		51-26-3			
Thyroxine		51-48-9			
Tiadenol		6964-20-1			
tiagabine	3-Piperidinecarboxylic acid, 1-[4,4-bis(3-methyl-2-thienyl)-3-butenyl]-, (R)- [CAS]	115103-54-3	WO 8700171	Antiepileptic	Epilepsy, general
Tiamenidine		31428-61-2			
tianteptine	Heptanoic acid, 7-[(3-chloro-6,11-dihydro-6-methylidibenzo[c,f][1,2]thiazepin-11-yl)amino]-, S,S-dioxide [CAS]	72797-41-2 66981-73-5	GB 1269551	Antidepressant	Depression, general
tiapride	Benzamide, N-[2-(diethylamino)ethyl]-2-methoxy-5-(methylsulfonyl)- [CAS]	51012-32-9	GB 1394563	Neuroleptic	
tiaprofenic acid	2-Thiopheneacetic acid, 5-benzoyl-Alpha-methyl- [CAS]	33005-95-7	GB 1331505	Antiarthritic, other	
Tiamamide		32527-55-2			
tiazofurin	4-Thiazolecarboxamide, 2-(3-D-ribofuranosyl)- [CAS]	60084-10-8	EP 54432	Anticancer, antimetabolite	Cancer, leukaemia, chronic myelogenous
Tibezonium		54663-47-7			
tibolone	19-Norpregn-5(10)-en-20-yn-3-one, 17-hydroxy-7-methyl-, (7Alpha,17Alpha)- [CAS]	5630-53-5	EP 389035	Menopausal disorders	Hormone replacement therapy
Ticarcillin		34787-01-4			
ticlopidine	Thieno[3,2-c]pyridine, 5-[(2-chlorophenyl)methyl]-4,5,6,7-tetrahydro- [CAS]	53885-35-1 55142-85-3	GB 1554424	Antithrombotic	-
Ticrynafen		40180-04-9			
tiemonium	4-(3-hydroxy-3-phenyl-3-thien-2-yl-propyl)-4-methylmorpholinium	6252-92-2 144-12-7		Antispasmodic	

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tigecycline	2-Naphthacenecarboxamide, 4,7-bis(dimethylamino)-9-[[[(1,1-dimethylethyl)amino]acetyl]amino]-1,4,4a,5,5a,6,11,12a-octahydro-3,10,12,12a-tetrahydroxy-1,11-dioxo-, (4S,4aS,5aR,12aS)- [CAS]	220620-09-7	EP 582829	Tetracycline	Infection, general
<b>Tigemonam</b>		102507-71-1			
<b>Tigloidine</b>		495-83-0			
<b>Tilidine</b>		20380-58-9			
<b>Tilisolol</b>		85136-71-6			
tilmacoxib	Benzenesulfonamide, 4-(4-cyclohexyl)-2-methyl-5-oxazolyl)-2-fluoro- [CAS]	180200-68-4	WO 9619463	Alimentary/Metabolic, other	Polyp
tiudronic acid	Phosphonic acid, [[(4-chlorophenyl)thio]methylene]bis- [CAS]	89987-06-4	EP 100718	Osteoporosis treatment	Paget's disease
Timentin		86482-18-0		Antibiotic, other	Infection, general
timepidium	Piperidinium, 3-(di-2-thienylmethylene)-5-methoxy-1,1-dimethyl-, [CAS]	35035-05-3	GB 1358446	Antispasmodic	
<b>Timiperone</b>		57648-21-2			
timolol	(-)-1-(t-butylamino)-3-[(4-morpholino-1,2,5-thiadiazol-3-yl)oxy]-2-propanolmaleate (1:1) salt	26839-75-8 26921-17-5	GB 1253709	Antihypertensive, adrenergic, antiglaucoma	
<b>Timonac</b>		444-27-9			
<b>Tin Ethyl Etiopurpurin</b>		113471-15-1			
tinazoline	1H-Indole, 3-[(4,5-dihydro-1H-imidazol-2-yl)thio]- [CAS]	62882-99-9	US 3376311	Vasodilator, peripheral	
<b>Tinidazole</b>		19387-91-8			
<b>Tinoridine</b>		24237-54-5			
<b>Tiocarlide</b>		910-86-1			
<b>Tioclomarol</b>		22619-35-8			
tioconazole	1H-imidazole, 1-[2-[(2-chloro-3-thienyl)methoxy]-2-(2,4-dichlorophenyl)ethyl]- [CAS]	61675-64-7 65899-73-2	US 4062966	Antifungal	Infection, fungal, general
tiopronin	Glycine, N-(2-mercapto-1-oxopropyl)- [CAS]	1953-02-2	US 3246025	Urological	Homocystinuria

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tiotropium	3-Oxa-9-azoniatricyclo(3.3.1.0 <sup>2,4</sup> )nonane, 7-((hydroxydi-2-thienylacetyl)oxy)-9,9-dimethyl-, [CAS]	136310-93-5	EP 418716	COPD treatment	Chronic obstructive pulmonary disease
Tioxolone		4991-65-5			
Tipepidine		5169-78-8			
tipifarnib	2-(1H)-Quinolone, 6-(amino(4-chlorophenyl)(1-methyl-1H-imidazol-5-yl)methyl)-4-(3-chlorophenyl)-1-methyl [CAS]	192185-68-5 192185-72-1	WO 9716443	Anticancer, other	Cancer, breast
tipranavir	N-[3-[1(R)-[4-Hydroxy-2-oxo-6(R)-(2-phenylethyl)-6-propyl-5,6-dihydro-2H-pyran-3-yl]propyl]phenyl]-5-(trifluoromethyl)pyridine-2-sulfonamide	174484-41-4		Antiviral, anti-HIV	Infection, HIV/AIDS
tiqizium	2H-Quinolizinium, 3-(di-2-thienylmethylene)octahydro-5-methyl-, [CAS]	71731-58-3	US 4205074	Antispasmodic	
tirapazamine	1,2,4-Benzotriazin-3-amine, 1,4-dioxide- [CAS]	20028-80-2 27314-97-2 5424-06-6	DE 2204574	Radio/chemosensitizer	Cancer, lung, non-small cell
Tiratricol		51-24-1			
tirilazad	Pregna-1,4,9(11)-triene-3,20-dione, 21-[4-(2,6-di-1-pyrrolidinyl-4-pyrimidinyl)-1-piperazinyl]-16-methyl-, (16Alpha)-, [CAS]	110101-65-0 110101-67-2 110101-66-1	WO 8701706	Neuroprotective	Haemorrhage, subarachnoid
tirofiban	L-Tyrosine, N-(butylsulfonyl)-O-[4-(4-piperidinyl)butyl]-, [CAS]	142373-60-2 144494-65-5	EP 478363	Antithrombotic	Infarction, myocardial
tiropramide	Benzenepropanamide, Alpha-(benzoylamino)-4-[2-(diethylamino)ethoxy]-N,N-dipropyl-, (+)-, [CAS]	55837-29-1	DE 2503992	Antispasmodic	Muscle spasm, general
Titanium Sulfate		13825-74-6			
tixocortol	Pregn-4-ene-3,20-dione, 21-[[2,2-dimethyl-1-oxopropyl]thio]-11,17-dihydroxy-, (11S)- [CAS]	55560-96-8 61951-99-3	GB 1475795	Antiallergic, non-asthma, mucosal, topical	Rhinitis, allergic, general



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tizanidine	2,1,3-Benzothiadiazol-4-amine, 5-chloro-N-(4,5-dihydro-1H-imidazol-2-yl)-[CAS]	51322-75-9	GB 1429926	Muscle relaxant	Spastic paralysis
TLK-199	Glycine, L-Gamma-glutamyl-S-(phenylmethyl)-L-cysteiny-2-phenyl-, diethyl ester, (2R)- [CAS]	168682-53-9	US 5679643	Immunostimulant, other	Myelodysplastic syndrome
TLK-286	Glycine, L-Gamma-glutamyl-3-[[2-chloroethyl]amino]phosphinyloxyethyl]sulfonyl-L-alanyl-2-phenyl-, (2R)- [CAS]	158382-37-7	US 5545621	Anticancer, other	Cancer, ovarian
TNF- $\beta$ analogue			RU 2035185	Anticancer, immunological	Cancer, general
TNP-470		129298-91-5			
TO-186	Pregna-1,4-diene-3,20-dione, 9-fluoro-11 $\beta$ ,17,21-trihydroxy-16 $\beta$ .beta.-methyl-, 17-butyrate 21-propionate [CAS]	5534-02-1		Antipruritic/inflamm, allergic	
tobramycin	O-3-amino-3-deoxy-Alpha-D-glucopyranosyl-(1,6)-O-(2,6-diamino-2,3,6-trideoxy-Alpha-D-ribo-hexopyranosyl-(1-4)-2-deoxy- [CAS]	32986-56-4			Infection, respiratory tract, general
tocainide	Propanamide, 2-amino-N-(2,6-dimethylphenyl)- [CAS]	41708-72-9	US 4218477	Antiarrhythmic	Fibrillation, ventricular
Tocamphyl		5634-42-4			
tocladesine	8-Chloroadenosine 3'5'-cyclic phosphate	41941-56-4		Anticancer, other	Cancer, colorectal
Tocoretinate		40516-48-1			
Todralazine		14679-73-3			
Tofenacin		15301-93-6			
tofimilast	5H-Pyrazolo[3,4-c]-1,2,4-triazolo[4,3-a]pyridine,9-cyclopentyl-7-ethyl-6,9-dihydro-3-(2-thienyl)-	185954-27-2		Antiasthma	Asthma
tofisopam	5H-2,3-Benzodiazepine, 1-(3,4-dimethoxyphenyl)-5-ethyl-7,8-dimethoxy-4-methyl-[CAS]	22345-47-7	GB 1334271	Anxiolytic	Anxiety, general
Tolazamide		1156-19-0			

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Tolazoline		59-98-3			
Tolbutamide		64-77-7			
tolcapone	Methanone, (3,4-dihydroxy-5-nitrophenyl)(4-methylphenyl)- [CAS]	134308-13-7	EP 237929	Antiparkinsonian	Parkinson's disease
tolcidate	Carbamothioic acid, methyl(3-methylphenyl)-, O-(1,2,3,4-tetrahydro-1,4-methanonaphthalen-6-yl) ester [CAS]	50838-36-3	GB 1364407	Antifungal	Infection, dermatological
Tolcyclamide		664-95-9			
tolevamer	Benzenesulfonic acid, 4-ethenyl-, homopolymer,	28038-50-8		Antibacterial, other	Infection, Clostridium, general
tolifenamic acid	Benzoic acid, 2-[(3-chloro-2-methylphenyl)amino]- [CAS]	13710-19-5	DE 1543295	Anti-inflammatory	Inflammation, general
Tolindate		27877-51-6			
Toliprolol		2933-94-0			
Tolmetin		26171-23-3			
Tolnaftate		2398-96-1			
Tolonidine		4201-22-3			
Tolonium		92-31-9			
toloxatone	2-Oxazolidinone, 5-(hydroxymethyl)-3-(3-methylphenyl)- [CAS]	29218-27-7	GB 1250538	Antidepressant	
Tolperisone		728-88-1			
Tolpropamine		5632-44-0			
Tolrestat		82964-04-3			
tolserine	Carbamic acid, (2-methylphenyl)-, (3aS,8aR)-1,2,3,3a,8,8a-hexahydro-1,3a,8-trimethylpyrrolo[2,3-b]indol-5-yl ester [CAS]	145209-30-9		Cognition enhancer	Alzheimer's disease
tolterodine	Phenol, 2-[3-bis(1-methylethylamino)-1-phenylpropyl]-4-methyl-, (R)- [CAS]	124937-51-5	EP 325571	Urological	Incontinence
tolvaptan	Benamide, N-[4-[(7-chloro-2,3,4,5-tetrahydro-5-hydroxy-1H-1-benzazepin-1-yl)carbonyl]-3-methylphenyl]-2-methyl- [CAS]	150683-30-0	EP 450097	Cardiovascular	Heart failure

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Tolycaine		3686-58-6			
Topiramate	Beta-D-Fructopyranose, 2,3:4,5-bis-O-(1-methylethylidene)-, sulfamate [CAS]	97240-79-4	EP 533483	Antiepileptic	Epilepsy, generalized, tonic-clonic
topoisomerase inhibitors			US 5733880	Anticancer, other	Cancer, general
topotecan	1H-Pyran[3',4':6,7]indolizino[1,2-b]quinoline-3,14(4H,12H)-dione, 9-[[dimethylamino)methyl]-4-ethyl-4,10-dihydro-, (S)- [CAS]	123948-87-8	EP 321122	Anticancer, other	Cancer, ovarian
torasemide	3-Pyridinesulfonamide, N-[[[1-methylethyl)amino]carbonyl]-4-[(3-methylphenyl)amino]- [CAS]	56211-40-6	US 4018929	Antihypertensive, diuretic	Hypertension, general
torcetrapib	ethyl (2R,4S)-4-[[3,5-bis(trifluoromethyl)benzyl](methoxycarbonyl)amino]-2-ethyl-6-(trifluoromethyl)-3,4-dihydroquinoline-1(2H)-carboxylate	262352-17-0		Hypolipaeic/Antiatherosclerosis	Atherosclerosis
torcitabine	β-L-2'Deoxyctidine			Antiviral, other	Infection, hepatitis-B virus
torsemifene	Ethanamine, 2-[4-(4-chloro-1,2-diphenyl-1-butenyl)phenoxy]-N,N-dimethyl-, (Z)-[CAS]	89778-26-7 89778-27-8	EP 95875	Anticancer, hormonal	Cancer, breast
Torsemide		56211-40-6			
Tositumomab		208921-02-2			
tosufloxacin	1,8-Naphthyridine-3-carboxylic acid, 7-(3-amino-1-pyrrolidinyl)-1-(2,4-difluorophenyl)-6-fluoro-1,4-dihydro-4-oxo-, [CAS]	100490-36-6 115964-29-9	US 4704459	Quinolone antibacterial	Infection, urinary tract
tramadol	Cyclohexanol, 2-[(dimethylamino)methyl]-1-(3-methoxyphenyl)-, cis-(+/-)-[CAS]	27203-92-5 36282-47-0		Analgesic, other	Pain, general
Tramazoline		1082-57-1			
trandolapril	1H-Indole-2-carboxylic acid, 1-[2-[(1-carboxy-3-phenylpropyl)amino]-1-oxopropyl]octahydro-, [2S-[1(R*(R*),2Alpha,3aAlpha,7aβ)- [CAS]	87679-71-8 87679-37-6 52-53-9	DE 3151690	Antihypertensive, renin system	Hypertension, general

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tranexamic acid	Cyclohexanecarboxylic acid, 4-(aminomethyl)-, trans- [CAS]	1197-18-8	US 3950405	Antifibrinolytic	Menstrual disorder, general
tranilast	Benzoic acid, 2-[[3-(3,4-dimethoxyphenyl)-1-oxo-2-propenyl]amino]- [CAS]	53902-12-8	US 3940422	Vulnery	Wound healing
trans-retinoic acid	Retinoic acid [CAS]	302-79-4		Anticancer, other	Cancer, general
Tranylcypromine		155-09-9			
trapidil	[1,2,4]Triazolo[1,5-a]pyrimidin-7-amine, N,N-diethyl-5-methyl- [CAS]	15421-84-8	DD 55956	Vasodilator, coronary	
Trastuzumab		180288-69-1			
travoprost	5-Heptenoic acid, 7-(3,5-dihydroxy-2-(3-hydroxy-4-(3-(trifluoromethyl)phenoxy)-1-butenyl)cyclopentyl)-, 1-methylethylester (1R(1Alpha(Z),2B(1E,3R*),3Alpha,5Alpha) [CAS]	157283-68-6		Formulation, mucosal, topical	Glaucoma
Traxanox		58712-69-9			
traxoprodil	1-Piperidineethanol, 4-hydroxy-Alpha-(4-hydroxyphenyl)-beta-methyl-4-phenyl-, (AlphaS,betaS)- [CAS]	134234-12-1 188591-67-5		Analgesic, other	Pain, general
trazodone	1,2,4-Triazolo[4,3-a]pyridin-3(2H)-one, 2-[3-[4-(3-chlorophenyl)-1-piperazinyl]propyl]- [CAS]	19794-93-5 25332-39-2	US 4215104	Antidepressant	
Tremacamra		155576-45-7			
Trenbolone		10161-33-8			
Trengestone		5192-84-7			
treosulfan	1,2,3,4-Butanetetrol, 1,4-dimethanesulfonate, [S-(R*,R*)]- [CAS]	299-75-2	WO 8401506	Anticancer, alkylating	
trepibutone	Benzenebutanoic acid, 2,4,5-triethoxy-Gamma-oxo- [CAS]	41826-92-0	GB 1387733	Antispasmodic	
treprostinal	Prosta-5,13-dien-1-oic acid, 6,9-epoxy-11,15-dihydroxy-, [5Z,9Alpha,11Alpha,13E,15S]- [CAS]	35121-78-9 61849-14-7	US 6054486	Formulation, parenteral, other	Hypertension, pulmonary
tretinoin	Retinoic acid [CAS]	302-79-4		Formulation, dermal, topical	Acne

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tretoquinol	6,7-isoquinolinediol, 1,2,3,4-tetrahydro-1-[(3,4,5-trimethoxyphenyl)methyl]-, (S)- [CAS]	18559-59-6 30418-38-3 21650-42-0	ZA 6802416	Antiasthma	
TRH		24305-27-9			
TRI-50b	TRI 50b [CAS]	226214-49-9		Antithrombotic	Thrombosis, general
Triacetin		102-76-1			
Triamcinolone		76-25-5			
Acetonide					
Triamcinolone		31002-79-6			
Benetonide					
Triamcinolone		5611-51-8			
Hexacetoneide					
	Pregna-1,4-diene-3,20-dione, 9-fluoro-11,21-dihydroxy-16,17-[(1-methylethylidene)bis(oxy)]-, (11 $\beta$ ,16 $\alpha$ ) [CAS]	76-25-5 124-94-7		Formulation, inhalable, topical	Asthma
triamcinolone					
Triamterene		396-01-0			
Triapine	Triapine [CAS]	236392-56-6	US 6458816	Anticancer, antimetabolite	Cancer, leukaemia, general
Triaziquone		68-76-8			
triazolam	8-chloro-6-(2-chlorophenyl)-1-methyl-4H-[1,2,4]-triazolo[4,3-a][1,4]benzodiazepine	28911-01-5	US 3980790	Hypnotic/Sedative	Insomnia
Tribenoside		10310-32-4			
Trichlorfon		52-68-6			
Trichlormethiazide		133-67-5			
Trichlormethine		555-77-1			
Trichloroethylene		79-01-6			
Triclobisonium		79-90-3			
Triclocarban		101-20-2			
Triclofenol Piperazine		5714-82-9			
Triclofos		306-52-5			
Triclosan		3380-34-5			
Tricromyl		85-90-5			
Tridihexethyl iodide		125-99-5			



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trientine	1,2-Ethanediamine, N,N2-6is(2aminoethyl)-, [CAS]	38260-01-4 112-24-3		Metabolic and enzyme disorders	Wilson's disease
Triethanolamine		102-71-6			
Triethylenemelamine		51-18-3			
Triethylenephosphoramide		545-55-1			
Triethylenethiophosphoramide		52-24-4			
Trifluoperazine		117-89-5			
Trifluoperidol		749-13-3			
Triflupromazine		146-54-3			
trifluridine	Thymidine, Alpha,Alpha,Alpha-trifluoro- [CAS]	70-00-8	US 3201387	Antiviral, other	Infection, herpes virus, general
triflusal	Benzoic acid, 2-(acetyloxy)-4-(trifluoromethyl)- [CAS]	322-79-2	US 4096252	Antithrombotic	Thrombosis, general
Trihexyphenidyl		52-49-3			
trilostane	Androst-2-ene-2-carbonitrile, 4,5-epoxy-3,17-dihydroxy-, (4Alpha,5Alpha,17B)- [CAS]	13647-35-3	US 3296255	Anticancer, hormonal	Cancer, breast
Trimazosin		35795-16-5			
trimebutine	Benzoic acid, 3,4,5-trimethoxy-, 2-(dimethylamino)-2-phenylbutyl ester, (Z)-2-butenedioate (1:1) [CAS]	34140-59-5 39133-31-8	DE 2151716	Antispasmodic	
Trimecaine		616-68-2			
Trimeprazine		84-96-8			
Trimetazidine		5011-34-7			
Trimethadione		127-48-0			
Trimethaphan		68-91-7			
Trimethobenzamide		138-56-7			
Trimethoprim		738-70-5			
Trimetozine		635-41-6			
trimetrexate	2,4-Quinazolinediamine, 5-methyl-6-[[[(3,4,5-trimethoxyphenyl)amino]methyl]- [CAS]	52128-35-5 82952-64-5	US 4391809	Antifungal	Infection, Pneumocystis jiroveci



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trimipramine	5H-Dibenz[b,f]azepine-5-propanamine, 10,11-dihydro-N,N, $\beta$ -trimethyl-, (Z)-2-butenedioate (1:1) [CAS]	521-78-8 739-71-9		Antidepressant	
Trimoprostil		69900-72-7			
Trioxsalen		3902-71-4			
tripamide	Benzamide, 3-(aminosulfonyl)-4-chloro-N-(octahydro-4,7-methano-2H-isoindol-2-yl)- (3 $\alpha$ Alfa,4Alfa,7Alfa,7aAlfa)- [CAS]	73803-48-2	JP 7305585	Antihypertensive, diuretic	Hypertension, general
Triparanol		78-41-1			
Tripelennamine		91-81-6			
Triprolidine		486-12-4			
triptorelin	Luteinizing hormone-releasing factor (pig), 6-D-tryptophan- [CAS]	124508-66-3 57773-63-4	US 4010125	Releasing hormones	Cancer, prostate
triflozine	Morpholine, 4-[[thioxo(3,4,5-trimethoxyphenyl)methyl]- [CAS]	35619-65-9	US 3862138	Antiulcer	
Tritoqualine		14504-73-5			
TRK-530	Phosphonic acid, [[4-(methylthio)phenyl]thio]methylene]bis-, disodium salt [CAS]	151425-92-2	WO 9410181	Antiarthritic, other	Arthritis, rheumatoid
TRK-820	2-Propenamide, N-[(5Alfa,6 $\beta$ )-17-(cyclopropylmethyl)-4,5-epoxy-3,14-dihydroxymorphinan-6-yl]-3-(3-furanyl)-N-methyl-, monohydrochloride, (2E)- [CAS]	152658-17-8	WO 9315081	Antipruritic/inflamm, non-allergic	Pruritus
Troclosene		2244-21-5			
trofosamide	3-2-(chloroethyl)-2-[bis(2-chloroethyl)amino]tetrahydro-2H-1,3,2-oxazaphosphorin 2-oxide	22089-22-1	GB 1188159	Anticancer, alkylating	
Troglitazone		97322-87-7			
Troleandomycin		2751-9-9			
Trolnitrate		588-42-1			
tromantadine	N-(1-adamantyl)-2-(2-dimethylamine ethoxy)acetamide	53783-83-8	DE 1941218	Antiviral, other	Infection, herpes simplex virus
Tromethamine		77-86-1			

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Tropacine		6878-98-4			
Tropesin		65189-78-8			
Tropicamide		1508-75-4			
tropine	1H-Indole-3-acetic acid, 1-(4-chlorobenzoyl)-5-methoxy-2-methyl-, 2-carboxy-2-phenylethyl ester, (+/-)- [CAS]	65189-78-8		Antiarthritic, other	
tropisetron	1H-Indole-3-carboxylic acid, 8-methyl-8-azabicyclo[3.2.1]oct-3-yl ester, endo-[CAS]	89565-68-4	GB 2125398	Antiemetic	Chemotherapy-induced nausea and vomiting
Trospectomycin		88669-04-9			
trospium	3Alpha-Hydroxyspiro[1AlphaH,5AlphaH-nortropane-8,1'-pyrrolidinium] benzilate	10405-02-4		Urological	Pollakisuria
trovafloxacin	1,8-Naphthyridine-3-carboxylic acid, 7-(6-amino-3-azabicyclo[3.1.0]hex-3-yl)-1-(2,4-difluorophenyl)-6-fluoro-1,4-dihydro-4-oxo-, (1Alpha,5Alpha,6Alpha)-, [CAS]	147059-72-1 147059-75-4	US 5164402	Quinolone antibacterial	Infection, respiratory tract, general
troxacitabine	2(1H)-Pyrimidinone, 4-amino-1-(2-(hydroxymethyl)-1,3-dioxolan-4-yl)-, (2S-cis)-[CAS]	145918-75-8		Anticancer, other	Cancer, leukaemia, acute myelogenous
Troxerutin		7085-55-4			
troxipide	Benzamide, 3,4,5-trimethoxy-N-3-piperidinyl-, (+/-)- [CAS]	30751-05-4 99777-81-8	US 3647805	Antilucer	Ulcer, gastric
Trypan Red		574-64-1			
Tryparsamide		554-72-3			
Tryptophan		73-22-3			
TSH		9002-71-5			
TSN-09	6,14-Ethenomorphinan-7-methanol, 17-(cyclopropylmethyl)-Alpha-(1,1-dimethylethyl)-,5-epoxy-18,19-dihydro-3-hydroxy-6-methoxy-Alpha-methyl-, [5Alpha,7Alpha,(S)]- [CAS]	52485-79-7		Formulation, transdermal, patch	Pain, cancer
TU-2100	Nonanedioic acid, bis[(2-(ethoxycarbonyl)phenyl] ester		US 6180669	Antiacne	Acne

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Tuaminoheptane		123-82-0			
Tubercidin		69-33-0			
Tubocurarine Chloride		57-94-3			
tulobuterol	Benzenemethanol, 2-chloro-Alpha-[[[(1,1-dimethylethyl)amino]methyl]- [CAS]	41570-61-0	DE 2244737	Antiasthma	Asthma
TV-3326	N-(Propargyl-(3R)aminoindan-5-yl)-ethyl methyl carbamate			Cognition enhancer	Alzheimer's disease
TY-11223	Acetic acid, [2-[2,3,3a,6,7,7a-hexahydro-2-hydroxy-1-(3-hydroxy-4,4-dimethyl-1,6-nonadienyl)-1H-inden-5-yl]ethoxy]-, [1S-[1Alpha(R*),2S,3aAlpha,7aAlpha]]- [CAS]	140694-43-5	US 4837342	Antithrombotic	Unspecified
TY-12533	6,7,8,9-Tetrahydro-2-methyl-5H-cyclohepta[b]pyridine-3-carbonylguanidine maleate		US 6258829	Antiarrhythmic	Unspecified
TYB-3215	D-Glucitol, 1,4:3,6-dianhydro-, dinitrate [CAS]	87-33-2		Formulation, modified-release, other	Angina, general
Tybamate		4268-36-4			
tyloxapol	4-(1,1,3,3-Tetramethylbutyl)phenol polymer with formaldehyde and oxirane [CAS]	25301-02-4		Formulation, inhalable, topical	Cystic fibrosis
Tymazoline		24243-97-8			
Tyramine		51-67-2			
Tyropanoate		7246-21-1			
Ubenimex		58970-76-6			
ufenamate	Benzoic acid, 2-[[3-(trifluoromethyl)phenyl]amino]-, butyl ester [CAS]	67330-25-0	BE 861852	Antipruritic/inflamm, non-allergic	
Undecylenic Acid		112-38-9			
Unoprostone		120373-36-6			

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UR-8880	4-[(4-Chloro-5-(3-fluoro-4-methoxyphenyl)imidazol-1-yl)benzenesulfonamide- [CAS]			Anti-inflammatory	Inflammation, general
Uracil Mustard		66-75-1			
Uralyt-U	1,2,3-Propanetricarboxylic acid, 2-hydroxy-, potassium sodium salt (5:6:6), hydrate [CAS]	55049-48-4	US 4400535	Urological	
urapidil	2,4(1H,3H)-Pyrimidinedione, 6-[[3-[4-(2-methoxyphenyl)-1-piperazinyl]propyl]amino]-1,3-dimethyl- [CAS]	34661-75-1	GB 1309324	Antihypertensive, adrenergic	Hypertension, general
urea	Urea [CAS]	57-13-6		Antipsoriasis	
Uredepa		302-49-8			
Urethan		51-79-6			
Uridine 5'-Triphosphate		63-39-8			
Urinastatin		80449-31-6			
ursodeoxycholic acid	3Alpha,7beta-dihydroxy-5beta-cholan-24-oic acid [CAS]	128-13-2		Formulation, other, Cirrhosis, primary biliary, hepatic dysfunction, biliary calculus	Cirrhosis, primary biliary
Ursodiol		128-13-2			
Ushercell			US 6063773	Formulation, mucosal, topical	Contraceptive, female
Uzarin		20231-81-6			
valaciclovir	L-Valine, 2-[(2-amino-1,6-dihydro-6-oxo-9H-purin-9-yl)methoxy]ethyl ester [CAS]	124832-26-4	EP 308065	Antiviral, other	Infection, herpes simplex virus
Valacyclovir		124832-26-4			
valdecoxib	Benzenesulfonamide, 4-(5-methyl-3-phenyl-4-isoxazolyl)- [CAS]	181695-72-7	US 5859257	Antiarthritic, other	Arthritis, rheumatoid
Valdetamide		512-48-1			
Valethamate		90-22-2			
valganciclovir	L-Valine, 2-[(2-amino-1,6-dihydro-6-oxo-9H-purin-9-yl)methoxy]-3-hydroxypropyl ester [CAS]	175865-59-5 175865-60-8	EP 694547	Antiviral, other	Infection, cytomegalovirus
Valnoctamide		4171-13-5			

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valomaciovir	L-Valine (3R)-3-((2-amino-1,6-dihydro-6-oxo-9H-purin-9-yl)methyl)-4-((1-oxooctadecyl)oxy)butyl ester [CAS]	195156-77-5		Antiviral, other	Infection, herpes simplex virus
valproate	Pentanoic acid, 2-propyl-, [CAS]	76584-70-8 1069-66-5	US 4988731	Antiepileptic	Epilepsy, generalized, tonic-clonic
Valproic Acid		99-66-1			
Valpromide		2430-27-5			
valrocemide	Pentanamide, N-(2-amino-2-oxoethyl)-2-propyl-, [CAS]	92262-58-3	US 5585358	Antiepileptic	Epilepsy, general
valrubicin	Pentanoic acid, 2-(1,2,3,4,6,11-hexahydro-2,5,12-trihydroxy-7-methoxy-6,11-dioxo-4-((2,3,6-trideoxy-3-((trifluoroacetyl)amino)-Alpha-L-lyxo-hexopyranosyl)oxy)-2-naphthacenyl)-2-oxoethyl ester (2S-cis)-[CAS]	56124-62-0	US 4035566	Anticancer, antibiotic	Cancer, bladder
valsartan	L-Valine, N-(1-oxopentyl)-N-[[2'-(1H-tetrazol-5-yl)[1,1'-biphenyl]-4-yl]methyl]-[CAS]	137862-53-4	EP 443983	Antihypertensive, renin system	Hypertension, general
Valspodar		121584-18-7			
varidenafil	Piperazine, 1-(3-(1,4-dihydro-5-methyl(-4-oxo-7-propylimidazo(5,1-f)(1,2,4)-triazin-2-yl)-4-ethoxyphenyl)sulfonyl)-4-ethyl-, [CAS]	224785-90-4		Male sexual dysfunction	Sexual dysfunction, male, general
varespladib	Acetic acid, ((3-(aminooxoacetyl)-2-ethyl-1-(phenylmethyl)-1H-indol-4-yl)oxy)-[CAS]	172732-68-2 172733-42-5	EP 675110	Septic shock treatment	Sepsis
Varicella Virus Vaccine					
vatanidipine	3,5-Pyridinedicarboxylic acid, 1,4-dihydro-2,6-dimethyl-4-(3-nitrophenyl)-, 2-[4-(4-(diphenylmethyl)-1-piperazinyl)phenyl]ethyl methyl ester, [CAS]	116308-55-5 133743-71-2	EP 257616	Neuroprotective	Hypertension, general
VEA			US 6007817	Radio/chemosensitizer	Cancer, general



Table IV

API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
vecuronium	Piperidinium, 1- [(2S,3A)5Alpha,16S,17S)-3,17-bis(acetyloxy)-2-(1-piperidinyl)androstan-16-yl]-1-methyl-, [CAS]	50700-72-6	US 4237126	Muscle relaxant	Anaesthesia, adjunct
<b>Velnacrine</b>		104675-29-8			
venlafaxine	Cyclohexanol, 1-[2-(dimethylamino)-1-(4-methoxyphenyl)ethyl]-, [CAS]	93413-69-5			
<b>Veralipride</b>		99300-78-4	GB 2227743	Antidepressant	Depression, general
		66644-81-3			
verapamil	Benzeneacetoneitrile, Alpha-[3-[(2-(3,4-dimethoxyphenyl)ethyl)methylamino]propyl]-3,4-dimethoxy-Alpha-(1-methylethyl)-[CAS]	52-53-9		Formulation, modified-release, other	Hypertension, general
verteporfin	23H,25H-Benzol[b]porphine-9,13-dipropionic acid, 18-ethenyl-4,4a-dihydro-3,4-bis(methoxycarbonyl)-4a,8,14,19-tetramethyl-, monomethyl ester, trans-[CAS]	129497-78-5	US 5238940	Ophthalmological	Macular degeneration
vesnarinone	Piperazine, 1-(3,4-dimethoxybenzoyl)-4-(1,2,3,4-tetrahydro-2-oxo-6-quinoliny)-[CAS]	81840-15-5	GB 2086896	Cardio stimulant	Heart failure
<b>Vetrabutine</b>		3735-45-3			
VF-233	Benzene carboximidamide, N,3,4,5-tetrahydroxy-, [CAS]	95933-74-7	US 4623659	Cardiovascular	Reperfusion injury
VI-0134			US 6403597	Male sexual dysfunction	Premature ejaculation
vidarabine	9H-Purin-6-amine, 9-β-D-arabinofuranosyl-[CAS]	24356-66-9			Infection, herpes virus, general
vigabatrin	5-Hexenoic acid, 4-amino- [CAS]	5536-17-4	GB 1159290	Antiviral, other	
vilazodone	2-Benzofurancarboxamide, 5-[4-[4-(5-cyano-1H-indol-3-yl)butyl]-1-piperazinyl]-[CAS]	68506-86-5 60643-86-9	GB 1472525	Antiepileptic	Epilepsy, partial (focal, local)
<b>Viloxazine</b>		163521-12-8	EP 648767	Antidepressant	Depression, general
<b>Viminol</b>		46817-91-8			
<b>Vinbarbital</b>		21363-18-8			
<b>Vinblastine</b>		125-44-0			
		865-21-4			
vinburnine	Eburnamenin-14(15H)-one, (3A)pha, 16Alpha)- [CAS]	474-00-0			
		4880-88-0	DE 1932245	Cognition enhancer	



Table IV

API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Vincamine		1617-90-9			
Vinconate		70704-03-9			
vincristine	Vincalcekoblastine, 22-oxo-, sulfate (1:1) (salt) [CAS]	2068-78-2 57-22-7	EP 207831	Formulation, parenteral, other	Cancer, general
vindesine	Vincalcekoblastine, 3-(aminocarbonyl)-O4-deacetyl-3-de(methoxycarbonyl)- [CAS]	53643-48-4 59917-39-4	GB 1463575	Anticancer, other	Cancer, leukaemia, acute lymphocytic
vinflunine	Aspidospermidine-3-carboxylic acid, 4-(acetyloxy)-6,7-didehydro-15-[(2R,4R,6S,8S)-4-(1,1-difluoroethyl)-1,3,4,5,6,7,8,9-octahydro-8-(methoxycarbonyl)-2,6-methano-2H-azecino[4,3-b]indol-8-yl]-3-hydroxy-16-methoxy-1-methyl-, methyl ester, (2S,3S,4S,5Apha,12S,19Apha) - [CAS]	162652-95-1	FR 2707988	Anticancer, other	Cancer, general
vinorelbine	C'-Norvincalcekoblastine, 3',4'-didehydro-4'-deoxy- [CAS]	71486-22-1	EP 10458	Anticancer, other	Cancer, lung, non-small cell
vinpocetine	Eburnamenine-14-carboxylic acid, ethyl ester, (3Apha,16Apha) - [CAS]	42971-09-5	GB 1405127	Cognition enhancer	Cognitive disorder, general
Vinyl Ether		109-93-3			
Vinylbital		2430-49-1			
Viquidil		84-55-9			
Viridin		3306-52-3			
Visnadine		477-32-7			
Vitamin A		68-26-8			
vitamin B12	Vitamin B12 [CAS]	68-19-9		Formulation, transmucosal, nasal	Anaemia, general
vitamin C	L-Ascorbic acid [CAS]	50-81-7		Formulation, modified-release, <=24hr	Nutrition
Vitamin D <sub>2</sub>		50-14-6			
Vitamin D <sub>3</sub>		67-97-0			
Vitamin K <sub>5</sub>		83-70-5			
Vitamins, Prenatal					

Table IV

API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
VLA-4 antagonists	((R,S)-4-(4-(Amino-imino-methyl)-phenyl)-3-((4-biphenyl)-methyl)-4-methyl-2,5-dioximidazolidin-1-yl)-acetyl-L-N-methyl-aspartyl-L-phenylglycine		EP 842943	Antiasthma	Asthma
VNP-40101M	1,2-Bis(methylsulfonyl)-1-(2-chloroethyl)-2-(methylamino)carbonylhydrazine		US 6040338	Anticancer, alkylating	Cancer, general
voglibose	D-epi-Inositol, 3,4-dideoxy-4-[[2-hydroxy-1-(hydroxymethyl)ethyl]amino]-2-C-(hydroxymethyl)- [CAS]	83480-29-9	EP 56194	Antidiabetic	Diabetes, Type II
voriconazole	4-Pyrimidineethanol, Alpha-(2,4-difluorophenyl)-5-fluoro-β-methyl-Alpha-(1H-1,2,4-triazol-1-ylmethyl)-, (R-(R*,S*))-[CAS]	137234-62-9	EP 440372	Antifungal	Infection, fungal, general
Vorozole	7-[3-{4-(2-Quinolinylmethyl)-1-piperaziny]propoxy}-3,4-dihydro-2H-1,4-benzothiazine-3-one	129731-10-8			
VUF-K-8788				Antiasthma	Asthma
Warfarin		81-81-2			Chemotherapy-induced injury, bone marrow, general
WF-10	Tetrachlorodecaoxide [CAS]	92047-76-2		Radio/chemoprotective	
WMC-79	2-(3-[4-[3-(6-oxo-6H-2,10b-diazaaceanthrenylen-5-ylamino)propyl]-piperazin-1-yl]propyl)-5-nitro-2-azaphenylene-1,3-dione			Anticancer, other	Cancer, colorectal
wound healing matrix			US 5897880	Formulation, transdermal, patch	Ulcer, diabetic
WP-170			US 6531121	Cytokine	Unspecified
xaliproden	Pyridine, 1,2,3,6-tetrahydro-1-[2-(2-naphthalenyl)ethyl]-4-[3-(trifluoromethyl)phenyl]-, [CAS]	90494-79-4 135354-020-8	EP 101381	Neuroprotective	Amyotrophic lateral sclerosis
xamoterol	4-Morpholinecarboxamide, N-[2-[[2-hydroxy-3-(4-hydroxyphenoxy)propyl]amino]ethyl]-, (+/-)-[CAS]	73210-73-8 81801-12-9	GB 2002748	Cardio stimulant	Heart failure

Table IV

API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
Xanomeline		131986-45-3			
Xanthinol Niacinate		437-74-1			
Xemilofiban		149820-74-6			
Xenbucin		959-10-4			
Xibenolol		81584-06-7			
xibornol	Phenol, 4,5-dimethyl-2-(1,7,7-trimethylbicyclo[2.2.1]hept-2-yl)-, exo-[CAS]	13741-18-9	GB 1206774	Antibacterial, other	Infection, general
ximelagatran	Glycine, N-((R)-cyclohexyl-2-((2S)-2-(((4-(hydroxyamino)iminomethyl)phenyl)methyl)amino)carbonyl)-1-azetidinyl)2-oxoethyl ester [CAS]	192939-46-1		Antithrombotic	Thrombosis, venous
<b>Ximoprofen</b>		56187-89-4			
xipamide	Benzamide, 5-(aminosulfonyl)-4-chloro-N-(2,6-dimethylphenyl)-2-hydroxy- [CAS]	14293-44-8	US 3567777	Antihypertensive, diuretic	
xorphanol	Morphinan-3-ol, 17-(cyclobutylmethyl)-8-methyl-6-methylene-, (8S)- [CAS]	77287-89-9		Analgesic, other	Pain, cancer
	2,5-Piperazinedione, 3-[[5-[(2-(dimethylamino)ethyl]thio]-2-thienyl]methylene]-6-(phenylmethylene)-, monohydrochloride, (3Z,6Z)- [CAS]				
XR-5118	N,N'-(1,2-Ethanediy)bis(imino-2,1-ethanediy)bis(9-methylphenazine-1-carboxamide)	174766-49-5	WO 9532190	Anticancer, other	Cancer, general
XR-5944			EP 934278	Anticancer, other	Cancer, general
<b>Xylometazoline</b>		526-36-3			
<b>Xylose</b>		58-86-6			
	2-Pyrimidinamine, 4-[3,4-dihydro-1-methyl-2(1H)-isquinoliny]-N-(4-fluorophenyl)-5,6-dimethyl-, monohydrochloride [CAS]	178307-42-1	WO 9605177	Antitumor	Ulcer, GI, general
YH-1885					
YM-511	Benzonitrile, 4-[[[4-bromophenyl)methyl]-4H-1,2,4-triazol-4-ylamino]- [CAS]	148869-05-0	WO 9305027	Anticancer, hormonal	Cancer, breast

Table IV

API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
YM-598	potassium(E)-N-[6-methoxy-5-(2-methoxyphenoxy)-2-(pyrimidin-2-yl)pyrimidin-4-yl]-2-phenylethanesulfonamide			Anticancer, other	Cancer, prostate
<b>Yohimbine</b>		146-48-5			
YT-146	Adenosine, 2-(1-octynyl)- [CAS]	90596-75-1	US 5270304	Anti-inflammatory	Inflammation, general
Z-321	Thiazolidine, 3-((2,3-dihydro-1H-inden-2-yl)acetyl)-4-(1-pyrrolidinylcarbonyl)-, (R)- [CAS]	130849-58-0	EP 372484	Cognition enhancer	Dementia, senile, general
Z-335	(1H-Indene-5-acetic acid, 2[[[(4-chlorophenyl)sulfonyl]amino]methyl]-2,3-dihydro, monosodium salt) [CAS]	146731-14-8	JP 92506077	Antithrombotic	Peripheral vascular disease
zafirlukast	Carbamic acid, [3-[[2-methoxy-4-[[[(2-methylphenyl)sulfonyl]amino]carbonyl]phenyl]methyl]-1-methyl-1H-indol-5-yl]-, cyclopentyl ester [CAS]	107753-78-6	EP 199543	Antiasthma	Asthma
zalcitabine	Cytidine, 2',3'-dideoxy- [CAS]	7481-89-2	US 4879277	Antiviral, anti-HIV	Infection, HIV/AIDS
<b>Zaldaride</b>		109826-26-8			
zaleplon	Acetamide, N-[3-(3-cyanopyrazolo[1,5-a]pyrimidin-7-yl)phenyl]-N-ethyl- [CAS]	151319-34-5	EP 776898	Hypnotic/Sedative	Insomnia
zaltoprofen	Dibenzol[b,f]thiepin-2-acetic acid, 10,11-dihydro-Alpha-methyl-10-oxo- [CAS]	74711-43-6	JP 55053282	Anti-inflammatory	
zanamivir	5-Acetamido-2,6-anhydro-3,4,5-trideoxy-4-guanidino-D-glycero-D-galacto-non-2-enonic acid [CAS]	139110-80-8	WO 9116320	Antiviral, other	Infection, influenza virus
zanapezil	1-Propanone, 3-(1-(phenylmethyl)-4-piperidinyl)-1-(2,3,4,5-tetrahydro-1H-1-benzazepin-8-yl)- [CAS]	142852-50-4	EP 487071	Cognition enhancer	Alzheimer's disease
<b>Zatebradine</b>		85175-67-3			
ZD-0473	Platinum, aminedichloro(2-methylpyridine)- (SP-4-3)- [CAS]	181630-15-9	EP 727430	Anticancer, alkylating	Cancer, ovarian
ZD-0947			WO 9528388	Urological	Overactive bladder
ZD-6126	N-acetylcolchicinol-O-phosphate			Anticancer, other	Cancer, general
ZD-9331	1H-Tetrazole-5-butanolic acid, Alpha-((4-(((1,4-dihydro-2,7-dimethyl-4-oxo-6-quinazoliny)methyl)-2-propynylamino)-2-fluorobenzoyl)amino) (S)- [CAS]	153537-73-6	GB 2264946	Anticancer, antimetabolite	Cancer, pancreatic

Table IV

API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
zebularine	2(1H)-Pyrimidinone, 1-β-D-ribofuranosyl- [CAS]	3690-10-6		Anticancer, other	Cancer, general
zelandopam	7,8-Isoquinolinediol, 4-(3,4-dihydroxyphenyl)-1,2,3,4-tetrahydro-, [CAS]	138086-00-7	JP 03190818	Vasodilator, renal	Hypertension, general
Zenarestat		112733-06-9			
Ziconotide		107452-89-1			
zidovudine	Thymidine, 3'-azido-3'-deoxy- [CAS]	30516-87-1	US 4724232	Antiviral, anti-HIV	Infection, HIV/AIDS
zileuton	Urea, N-(1-benzob[thien-2-yl)ethyl)-N-hydroxy- [CAS]	111406-87-2	EP 279263	Antiasthma	Asthma
Zimeldine		56775-88-3			
zinc acetate	hexakis(Im-acetato)Im4-oxotetrazinc	12129-82-7		Antiviral, other	Infection, herpes simplex virus prophylaxis
zinc acexamate	Hexanoic acid, 6-(acetylamino)-, zinc salt (2:1)- [CAS]	70020-71-2	EP 369088	Antilucer	Ulcer, duodenal
zinc ibuprofenate		78416-80-5		Anti-inflammatory, topical	Inflammation, dermal
Zinc p-Phenolsulfonate		127-82-2			
Zinc Salicylate		16283-36-6			
Zinostatin		9014-2-2			
zinostatin stimalamer		123760-07-6	EP 136791	Anticancer, antibiotic	Cancer, liver
Zipeprol		34758-83-3			
ziprasidone	2H-Indol-2-one, 5-(2-(4-(1,2-benzisothiazol-3-yl)-1-piperazinyl)ethyl)-6-chloro-1,3-dihydro- [CAS]	122883-93-6 146939-27-7	EP 281309	Neuroleptic	Schizophrenia
zofenopril	L-Proline, 1-[3-(benzoylthio)-2-methyl-1-oxopropyl]-4-(phenylthio)-, [1(R*),2Alpha,4Alpha]- [CAS]	75176-37-3 81872-10-8 81938-43-4	GB 2028327	Antihypertensive, renin system	Hypertension, general
zofenopril + HCTZ	L-Proline, 1-[3-(benzoylthio)-2-methyl-1-oxopropyl]-4-(phenylthio)-, [1(R*),2Alpha,4Alpha]- + 6-Chloro-3,4-dihydro-2H-1,2,4-benzothiazide-7-sulfonamide 1,1-dioxide [CAS]				
zoledronic acid	Phosphonic acid, [1-hydroxy-2-(1H-imidazol-1-yl)ethylidene]bis- [CAS]	118072-93-8 165800-06-6	EP 531253	Formulation, fixed-dose combinations Osteoporosis treatment	Hypertension, general Hypercalcaemia of malignancy



Table IV

API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
zolimidine	2-(p-methylsulfonylphenyl)imidazo[1,2-a]pyridine	1222-57-7	US 3318880	Antitumor	Gastritis
zolmitriptan	2-Oxazolidinone, 4-((3-(2-(dimethylamino)ethyl)-1H-indol-5-yl)methyl)-, (S)- [CAS]	139264-17-8	WO 9118897	Antimigraine	Migraine
zolpidem	Imidazo[1,2-a]pyridine-3-acetamide, N,N,6-trimethyl-2-(4-methylphenyl)-(R-(R*,R*))-2,3-dihydroxybutanedioate (2:1) [CAS]	99294-93-6 82626-48-0	EP 50563	Hypnotic/Sedative	Insomnia
<b>Zomepirac</b>		33369-31-2			
zonampanel	1-(2H)-Quinoxalineacetic acid, 3,4-dihydro-7-(1H-imidazol-1-yl)-6-nitro-2,3-dioxo- [CAS]	210245-80-0		Neuroprotective	Ischaemia, cerebral
zoniporide	1H-pyrazole-4-carboxamide, N-(aminoimino methyl)-5-cyclopropyl-1-(5-quinoliny)-	249296-45-5		Cardiovascular	Unspecified
zonisamide	1,2-Benzisoxazole-3-methanesulfonamide [CAS]	68291-97-4 68291-98-5	GB 2025931	Antiepileptic	Epilepsy, generalized, tonic-clonic
zopiclone	1-Piperazinecarboxylic acid, 4-methyl-, 6-(5-chloro-2-pyridinyl)-6,7-dihydro-7-oxo-5H-pyrrolo[3,4-b]pyrazin-5-yl ester [CAS]	43200-80-2	GB 1358680	Hypnotic/Sedative	Insomnia
<b>Zoplorestat</b>		110703-94-1			
<b>Zorubicin</b>		54083-22-6			
zosuquidar	1-Piperazineethanol, 4-(1,1-difluoro-1,1a,6,10b-tetrahydrodibenzo[a,e]cyclopropa[c]cyclohepten-6-yl)-Alpha-[(5-quinolinyloxy)methyl]-, [6(R)-(1aAlpha,6Alpha,10bAlpha)]- [CAS]	167465-36-3		Radio/chemosensitizer	Cancer, leukaemia, acute myelogenous
zotepine	Ethanamine, 2-[(8-chlorodibenzo[b,f]thiepin-10-yl)oxy]-N,N-dimethyl- [CAS]	26615-21-4	GB 1247067	Neuroleptic	Schizophrenia
ZP-123			WO 0162775	Antiarrhythmic	Arrhythmia, general
Z-tamoxifen	Ethanamine, 2-[4-(1,2-diphenyl-1-butenyl)phenoxy]-N,N-dimethyl-, (Z)- [CAS]	10540-29-1		Anticancer, hormonal	Cancer, colorectal



Table IV

API Generic Name	API Chemical Name	CAS No.	Patent Reference	Example of Therapeutic Use	Example of Indication
zuclopenthixol	1-Piperazineethanol, 4-[3-(2-chloro-9H-thioxanthen-9-ylidene)propyl]-, (Z)-[CAS]	53772-83-1	EP 270282	Neuroleptic	Psychosis, general
		982-24-1			
		85721-05-7			
		64053-00-5			

**CLAIMS:**

1. A pharmaceutical co-crystal composition, comprising: an API and a co-crystal former, wherein the API is a liquid or a solid at room temperature and the co-crystal former is a solid at room temperature, and wherein the API and co-crystal former are hydrogen bonded to each other.
2. The pharmaceutical co-crystal composition according to claim 1, wherein:
  - (a) the co-crystal former is selected from a co-crystal former of Table I or Table II;
  - (b) the API is selected from an API of Table IV;
  - (c) the API is selected from an API of Table IV and the co-crystal former is selected from a co-crystal former of Table I or Table II;
  - (d) the API is a liquid at room temperature;
  - (e) the API is a solid at room temperature;
  - (f) the API has at least one functional group selected from the group consisting of: ether, thioether, alcohol, thiol, aldehyde, ketone, thioketone, nitrate ester, phosphate ester, thiophosphate ester, ester, thioester, sulfate ester, carboxylic acid, phosphonic acid, phosphinic acid, sulfonic acid, amide, primary amine, secondary amine, ammonia, tertiary amine, imine, thiocyanate, cyanamide, oxime, nitrile, diazo, organohalide, nitro, S-heterocyclic ring, thiophene, N-heterocyclic ring, pyrrole, O-heterocyclic ring, furan, epoxide, peroxide, hydroxamic acid, imidazole, and pyridine;
  - (g) the co-crystal former has at least one functional group selected from the group consisting of: ether, thioether, alcohol, thiol, aldehyde, ketone, thioketone, nitrate ester, phosphate ester, thiophosphate ester, ester, thioester, sulfate ester, carboxylic acid, phosphonic acid, phosphinic acid, sulfonic acid, amide, primary amine, secondary amine, ammonia, tertiary amine, imine, thiocyanate, cyanamide, oxime, nitrile, diazo, organohalide, nitro, S-heterocyclic ring,

- thiophene, N-heterocyclic ring, pyrrole, O-heterocyclic ring, furan, epoxide, peroxide, hydroxamic acid, imidazole, and pyridine;
- (h) the difference in  $pK_a$  between the API and the co-crystal former does not exceed 2;
  - (i) the solubility of the co-crystal is increased as compared to the API;
  - (j) the dose response of the co-crystal is increased as compared to the API;
  - (k) the dissolution of the co-crystal is increased as compared to the API;
  - (l) the bioavailability of the co-crystal is increased as compared to the API;
  - (m) the stability of the co-crystal is increased as compared to the API;
  - (n) a difficult to salt or unsaltable API is incorporated into the co-crystal;
  - (o) the hygroscopicity of the co-crystal is decreased as compared to the API;
  - (p) an amorphous API is crystallized as a component of the co-crystal;
  - (q) the form diversity of the co-crystal is decreased as compared to the API; or
  - (r) the morphology of the co-crystal is modulated as compared to the API.
3. A pharmaceutical co-crystal composition, comprising: an API, a co-crystal former, and a third molecule; wherein the API is a liquid or a solid at room temperature and the co-crystal former is a solid at room temperature, and wherein the API and the third molecule are bonded to each other, and further wherein the co-crystal former and the third molecule are hydrogen bonded to each other.
4. The pharmaceutical co-crystal composition according to claim 3, wherein:
- (a) the co-crystal former is selected from a co-crystal former of Table I or Table II;
  - (b) the API is selected from an API of Table IV;
  - (c) the API is selected from an API of Table IV and the co-crystal former is selected from a co-crystal former of Table I or Table II;
  - (d) the API is a liquid at room temperature;

- (e) the API is a solid at room temperature;
- (f) the API has at least one functional group selected from the group consisting of: ether, thioether, alcohol, thiol, aldehyde, ketone, thioketone, nitrate ester, phosphate ester, thiophosphate ester, ester, thioester, sulfate ester, carboxylic acid, phosphonic acid, phosphinic acid, sulfonic acid, amide, primary amine, secondary amine, ammonia, tertiary amine, imine, thiocyanate, cyanamide, oxime, nitrile, diazo, organohalide, nitro, S-heterocyclic ring, thiophene, N-heterocyclic ring, pyrrole, O-heterocyclic ring, furan, epoxide, peroxide, hydroxamic acid, imidazole, and pyridine;
- (g) the co-crystal former has at least one functional group selected from the group consisting of: ether, thioether, alcohol, thiol, aldehyde, ketone, thioketone, nitrate ester, phosphate ester, thiophosphate ester, ester, thioester, sulfate ester, carboxylic acid, phosphonic acid, phosphinic acid, sulfonic acid, amide, primary amine, secondary amine, ammonia, tertiary amine, imine, thiocyanate, cyanamide, oxime, nitrile, diazo, organohalide, nitro, S-heterocyclic ring, thiophene, N-heterocyclic ring, pyrrole, O-heterocyclic ring, furan, epoxide, peroxide, hydroxamic acid, imidazole, and pyridine; or
- (h) the difference in  $pK_a$  between the API and the co-crystal former does not exceed 2;
- (i) the solubility of the co-crystal is increased as compared to the API;
- (j) the dose response of the co-crystal is increased as compared to the API;
- (k) the dissolution of the co-crystal is increased as compared to the API;
- (l) the bioavailability of the co-crystal is increased as compared to the API;
- (m) the stability of the co-crystal is increased as compared to the API;
- (n) a difficult to salt or unsaltable API is incorporated into the co-crystal;
- (o) the hygroscopicity of the co-crystal is decreased as compared to the API;

- (p) an amorphous API is crystallized as a component of the co-crystal;
  - (q) the form diversity of the co-crystal is decreased as compared to the API; or
  - (r) the morphology of the co-crystal is modulated as compared to the API.
5. A pharmaceutical co-crystal composition, comprising: a first and a second API, wherein each API is either a liquid or a solid at room temperature, and wherein the APIs are hydrogen bonded to a molecule.
6. The pharmaceutical co-crystal composition according to claim 5, wherein:
- (a) the first API is hydrogen bonded to the second API;
  - (b) an API is selected from an API of Table IV;
  - (c) each API is selected from an API of Table IV;
  - (d) an API is a liquid at room temperature and the other API is a solid at room temperature;
  - (e) each API is a solid at room temperature;
  - (f) an API has at least one functional group selected from the group consisting of: ether, thioether, alcohol, thiol, aldehyde, ketone, thioketone, nitrate ester, phosphate ester, thiophosphate ester, ester, thioester, sulfate ester, carboxylic acid, phosphonic acid, phosphinic acid, sulfonic acid, amide, primary amine, secondary amine, ammonia, tertiary amine, imine, thiocyanate, cyanamide, oxime, nitrile, diazo, organohalide, nitro, S-heterocyclic ring, thiophene, N-heterocyclic ring, pyrrole, O-heterocyclic ring, furan, epoxide, peroxide, hydroxamic acid, imidazole, and pyridine;
  - (g) each API has at least one functional group selected from the group consisting of: ether, thioether, alcohol, thiol, aldehyde, ketone, thioketone, nitrate ester, phosphate ester, thiophosphate ester, ester, thioester, sulfate ester, carboxylic acid, phosphonic acid, phosphinic acid, sulfonic acid, amide, primary amine, secondary amine, ammonia, tertiary amine, imine, thiocyanate, cyanamide, oxime, nitrile, diazo,

organohalide, nitro, S-heterocyclic ring, thiophene, N-heterocyclic ring, pyrrole, O-heterocyclic ring, furan, epoxide, peroxide, hydroxamic acid, imidazole, and pyridine;

- (h) the difference in  $pK_a$  between the first API and the second API does not exceed 2;
- (i) the solubility of the co-crystal is increased as compared to an API;
- (j) the dose response of the co-crystal is increased as compared to an API;
- (k) the dissolution of the co-crystal is increased as compared to an API;
- (l) the bioavailability of the co-crystal is increased as compared to an API;
- (m) the stability of the co-crystal is increased as compared to an API;
- (n) a difficult to salt or unsaltable API is incorporated into the co-crystal;
- (o) the hygroscopicity of the co-crystal is decreased as compared to an API;
- (p) an amorphous API is crystallized as a component of the co-crystal;
- (q) the form diversity of the co-crystal is decreased as compared to an API; or
- (r) the morphology of the co-crystal is modulated as compared to an API.

7. A pharmaceutical co-crystal composition, comprising: a first and a second co-crystal former, wherein each co-crystal former is a solid at room temperature, and wherein both co-crystal formers are hydrogen bonded to a molecule.

8. The pharmaceutical co-crystal composition according to claim 7, wherein:

- (a) the first co-crystal former is hydrogen bonded to the second co-crystal former;
- (b) a co-crystal former is selected from a co-crystal former of Table I or Table II;
- (c) each co-crystal former is selected from a co-crystal former of Table I or Table II;



- (d) a co-crystal former has at least one functional group selected from the group consisting of: ether, thioether, alcohol, thiol, aldehyde, ketone, thioketone, nitrate ester, phosphate ester, thiophosphate ester, ester, thioester, sulfate ester, carboxylic acid, phosphonic acid, phosphinic acid, sulfonic acid, amide, primary amine, secondary amine, ammonia, tertiary amine, imine, thiocyanate, cyanamide, oxime, nitrile, diazo, organohalide, nitro, S-heterocyclic ring, thiophene, N-heterocyclic ring, pyrrole, O-heterocyclic ring, furan, epoxide, peroxide, hydroxamic acid, imidazole, and pyridine;
- (e) each co-crystal former has at least one functional group selected from the group consisting of: ether, thioether, alcohol, thiol, aldehyde, ketone, thioketone, nitrate ester, phosphate ester, thiophosphate ester, ester, thioester, sulfate ester, carboxylic acid, phosphonic acid, phosphinic acid, sulfonic acid, amide, primary amine, secondary amine, ammonia, tertiary amine, imine, thiocyanate, cyanamide, oxime, nitrile, diazo, organohalide, nitro, S-heterocyclic ring, thiophene, N-heterocyclic ring, pyrrole, O-heterocyclic ring, furan, epoxide, peroxide, hydroxamic acid, imidazole, and pyridine;
- (f) the difference in  $pK_a$  between the first co-crystal former and the second co-crystal former does not exceed 2;
- (g) the solubility of the co-crystal is increased as compared to a co-crystal former;
- (h) the dose response of the co-crystal is increased as compared to a co-crystal former;
- (i) the dissolution of the co-crystal is increased as compared to a co-crystal former;
- (j) the bioavailability of the co-crystal is increased as compared to a co-crystal former;
- (k) the stability of the co-crystal is increased as compared to a co-crystal former;
- (l) a difficult to salt or unsaltable API is incorporated into the co-crystal;

- (m) the hygroscopicity of the co-crystal is decreased as compared to a co-crystal former;
- (n) an amorphous API is crystallized as a component of the co-crystal;
- (o) the form diversity of the co-crystal is decreased as compared to a co-crystal former; or
- (p) the morphology of the co-crystal is modulated as compared to a co-crystal former.

9. The pharmaceutical co-crystal composition according to claim 1, wherein the API is selected from celecoxib, carbamazepine, itraconazole, olanzapine, topiramate, modafinil, 5-fluorouracil, hydrochlorothiazide, acetaminophen, aspirin, flurbiprofen, phenytoin, or ibuprofen.

10. The pharmaceutical co-crystal composition according to claim 1, 3, 5, or 7, further comprising a pharmaceutically acceptable diluent, excipient, or carrier.

11. A co-crystal comprising an API and a co-crystal former selected from the group consisting of:

- (a) carbamazepine and saccharin;
- (b) carbamazepine and nicotinamide;
- (c) carbamazepine and trimesic acid;
- (d) celecoxib and nicotinamide;
- (e) olanzapine and nicotinamide;
- (f) celecoxib and 18-crown-6;
- (g) itraconazole and succinic acid;
- (h) itraconazole and fumaric acid;
- (i) itraconazole and L-tartaric acid;
- (j) itraconazole and L-malic acid;
- (k) itraconazoleHCl and DL-tartaric acid;
- (l) modafinil and malonic acid;

- (m) modafinil and glycolic acid;
- (n) modafinil and maleic acid;
- (o) topiramate and 18-crown-6;
- (p) 5-fluorouracil and urea;
- (q) hydrochlorothiazide and nicotinic acid;
- (r) hydrochlorothiazide and 18-crown-6;
- (s) hydrochlorothiazide and piperazine;
- (t) acetaminophen and 4,4'-bipyridine;
- (u) phenytoin and pyridone;
- (v) aspirin and 4,4'-bipyridine;
- (w) ibuprofen and 4,4'-bipyridine;
- (x) flurbiprofen and 4,4'-bipyridine;
- (y) flurbiprofen and trans-1,2-bis(4-pyridyl) ethylene;
- (z) carbamazepine and p-phthalaldehyde;
- (aa) carbamazepine and 2,6-pyridinecarboxylic acid;
- (bb) carbamazepine and 5-nitroisophthalic acid;
- (cc) carbamazepine and 1,3,5,7-adamantane tetracarboxylic acid; and
- (dd) carbamazepine and benzoquinone.

12. A process for preparing a pharmaceutical co-crystal composition comprising an API and a co-crystal former, comprising:

- (a) providing an API and a co-crystal former, wherein the API is a liquid or a solid at room temperature and the co-crystal former is a solid at room temperature;
- (b) grinding, heating, co-subliming, co-melting, or contacting in solution the API with the co-crystal former under crystallization conditions, so as to form a solid phase, wherein the API and co-crystal former are hydrogen bonded to each other;
- (c) isolating co-crystals formed thereby; and

- (d) incorporating the co-crystals into a pharmaceutical composition.

13. The process of claim 12, wherein:

- (a) the co-crystal former is selected from a co-crystal former of Table I or Table II;
- (b) the API is selected from an API of Table IV;
- (c) the API is selected from an API of Table IV and the co-crystal former is selected from a co-crystal former of Table I or Table II;
- (d) the API is a liquid at room temperature;
- (e) the API is a solid at room temperature;
- (f) the API has at least one functional group selected from the group consisting of: ether, thioether, alcohol, thiol, aldehyde, ketone, thioketone, nitrate ester, phosphate ester, thiophosphate ester, ester, thioester, sulfate ester, carboxylic acid, phosphonic acid, phosphinic acid, sulfonic acid, amide, primary amine, secondary amine, ammonia, tertiary amine, imine, thiocyanate, cyanamide, oxime, nitrile, diazo, organohalide, nitro, S-heterocyclic ring, thiophene, N-heterocyclic ring, pyrrole, O-heterocyclic ring, furan, epoxide, peroxide, hydroxamic acid, imidazole, and pyridine;
- (g) the co-crystal former has at least one functional group selected from the group consisting of: ether, thioether, alcohol, thiol, aldehyde, ketone, thioketone, nitrate ester, phosphate ester, thiophosphate ester, ester, thioester, sulfate ester, carboxylic acid, phosphonic acid, phosphinic acid, sulfonic acid, amide, primary amine, secondary amine, ammonia, tertiary amine, imine, thiocyanate, cyanamide, oxime, nitrile, diazo, organohalide, nitro, S-heterocyclic ring, thiophene, N-heterocyclic ring, pyrrole, O-heterocyclic ring, furan, epoxide, peroxide, hydroxamic acid, imidazole, and pyridine; or
- (h) the difference in  $pK_a$  between the API and the co-crystal former does not exceed 2.

14. A process for preparing a pharmaceutical co-crystal composition comprising an API, a co-crystal former, and a third molecule, comprising:
- (a) providing an API and a co-crystal former, wherein the API is a liquid or a solid at room temperature and the co-crystal former is a solid at room temperature;
  - (b) grinding, heating, co-subliming, co-melting, or contacting in solution the API with the co-crystal former under crystallization conditions, so as to form a solid phase, wherein the API and the third molecule are bonded to each other, and further wherein the co-crystal former and the third molecule are hydrogen bonded to each other;
  - (c) isolating co-crystals formed thereby; and
  - (d) incorporating the co-crystals into a pharmaceutical composition.
15. The process of claim 14, wherein:
- (a) the co-crystal former is selected from a co-crystal former of Table I or Table II;
  - (b) the API is selected from an API of Table IV;
  - (c) the API is selected from an API of Table IV and the co-crystal former is selected from a co-crystal former of Table I or Table II;
  - (d) the API is a liquid at room temperature;
  - (e) the API is a solid at room temperature;
  - (f) the API has at least one functional group selected from the group consisting of: ether, thioether, alcohol, thiol, aldehyde, ketone, thioketone, nitrate ester, phosphate ester, thiophosphate ester, ester, thioester, sulfate ester, carboxylic acid, phosphonic acid, phosphinic acid, sulfonic acid, amide, primary amine, secondary amine, ammonia, tertiary amine, imine, thiocyanate, cyanamide, oxime, nitrile, diazo, organohalide, nitro, S-heterocyclic ring, thiophene, N-heterocyclic ring, pyrrole, O-heterocyclic ring, furan, epoxide, peroxide, hydroxamic acid, imidazole, and pyridine;

- (g) the co-crystal former has at least one functional group selected from the group consisting of: ether, thioether, alcohol, thiol, aldehyde, ketone, thioketone, nitrate ester, phosphate ester, thiophosphate ester, ester, thioester, sulfate ester, carboxylic acid, phosphonic acid, phosphinic acid, sulfonic acid, amide, primary amine, secondary amine, ammonia, tertiary amine, imine, thiocyanate, cyanamide, oxime, nitrile, diazo, organohalide, nitro, S-heterocyclic ring, thiophene, N-heterocyclic ring, pyrrole, O-heterocyclic ring, furan, epoxide, peroxide, hydroxamic acid, imidazole, and pyridine; or
- (h) the difference in  $pK_a$  between the API and the co-crystal former does not exceed 2.

16. A process for preparing a pharmaceutical co-crystal composition comprising a first and a second API, comprising:

- (a) providing a first and a second API, wherein each API is either a liquid or a solid at room temperature;
- (b) grinding, heating, co-subliming, co-melting, or contacting in solution the APIs under crystallization conditions, so as to form a solid phase, wherein the APIs are hydrogen bonded to a molecule;
- (c) isolating co-crystals formed thereby; and
- (d) incorporating the co-crystals into a pharmaceutical composition.

17. The process of claim 16, wherein:

- (a) the first API is hydrogen bonded to the second API;
- (b) an API is selected from an API of Table IV;
- (c) each API is selected from an API of Table IV;
- (d) an API is a liquid at room temperature and the other API is a solid at room temperature;
- (e) each API is a solid at room temperature;
- (f) an API has at least one functional group selected from the group consisting of: ether, thioether, alcohol, thiol, aldehyde, ketone,



thioketone, nitrate ester, phosphate ester, thiophosphate ester, ester, thioester, sulfate ester, carboxylic acid, phosphonic acid, phosphinic acid, sulfonic acid, amide, primary amine, secondary amine, ammonia, tertiary amine, imine, thiocyanate, cyanamide, oxime, nitrile, diazo, organohalide, nitro, S-heterocyclic ring, thiophene, N-heterocyclic ring, pyrrole, O-heterocyclic ring, furan, epoxide, peroxide, hydroxamic acid, imidazole, and pyridine;

- (g) each API has at least one functional group selected from the group consisting of: ether, thioether, alcohol, thiol, aldehyde, ketone, thioketone, nitrate ester, phosphate ester, thiophosphate ester, ester, thioester, sulfate ester, carboxylic acid, phosphonic acid, phosphinic acid, sulfonic acid, amide, primary amine, secondary amine, ammonia, tertiary amine, imine, thiocyanate, cyanamide, oxime, nitrile, diazo, organohalide, nitro, S-heterocyclic ring, thiophene, N-heterocyclic ring, pyrrole, O-heterocyclic ring, furan, epoxide, peroxide, hydroxamic acid, imidazole, and pyridine; or
- (h) the difference in  $pK_a$  between the first API and the second API does not exceed 2.

18. A process for preparing a pharmaceutical co-crystal composition comprising a first and a second co-crystal former, comprising:

- (a) providing a first and a second co-crystal former, wherein each co-crystal former is a solid at room temperature;
- (b) grinding, heating, co-subliming, co-melting, or contacting in solution the co-crystal formers under crystallization conditions, so as to form a solid phase, wherein both co-crystal formers are hydrogen bonded to a molecule;
- (c) isolating co-crystals formed thereby; and
- (d) incorporating the co-crystals into a pharmaceutical composition.

19. The process of claim 18, wherein:

- (a) the first co-crystal former is hydrogen bonded to the second co-crystal former;
- (b) a co-crystal former is selected from a co-crystal former of Table I or Table II;
- (c) each co-crystal former is selected from a co-crystal former of Table I or Table II;
- (d) a co-crystal former has at least one functional group selected from the group consisting of: ether, thioether, alcohol, thiol, aldehyde, ketone, thioketone, nitrate ester, phosphate ester, thiophosphate ester, ester, thioester, sulfate ester, carboxylic acid, phosphonic acid, phosphinic acid, sulfonic acid, amide, primary amine, secondary amine, ammonia, tertiary amine, imine, thiocyanate, cyanamide, oxime, nitrile, diazo, organohalide, nitro, S-heterocyclic ring, thiophene, N-heterocyclic ring, pyrrole, O-heterocyclic ring, furan, epoxide, peroxide, hydroxamic acid, imidazole, and pyridine;
- (e) each co-crystal former has at least one functional group selected from the group consisting of: ether, thioether, alcohol, thiol, aldehyde, ketone, thioketone, nitrate ester, phosphate ester, thiophosphate ester, ester, thioester, sulfate ester, carboxylic acid, phosphonic acid, phosphinic acid, sulfonic acid, amide, primary amine, secondary amine, ammonia, tertiary amine, imine, thiocyanate, cyanamide, oxime, nitrile, diazo, organohalide, nitro, S-heterocyclic ring, thiophene, N-heterocyclic ring, pyrrole, O-heterocyclic ring, furan, epoxide, peroxide, hydroxamic acid, imidazole, and pyridine; or
- (f) the difference in  $pK_a$  between the first co-crystal former and the second co-crystal former does not exceed 2.

20. The process of claim 12, wherein the API is selected from celecoxib, carbamazepine, itraconazole, olanzapine, topiramate, modafinil, 5-fluorouracil, hydrochlorothiazide, acetaminophen, aspirin, flurbiprofen, phenytoin, or ibuprofen.

21. The process of claim 12, further comprising: incorporating a pharmaceutically acceptable diluent, excipient, or carrier.

22. A process of preparing a co-crystal comprising an API and a co-crystal former, comprising:

- (a) providing an API and a co-crystal former;
- (b) grinding, heating, co-subliming, co-melting, or contacting in solution the API with the co-crystal former under crystallization conditions, so as to form a solid phase; and
- (c) isolating co-crystals formed thereby;

wherein the API and the co-crystal former, respectively, are selected from the group consisting of: carbamazepine and saccharin, carbamazepine and nicotinamide, carbamazepine and trimesic acid, celecoxib and nicotinamide, olanzapine and nicotinamide, celecoxib and 18-crown-6, itraconazole and succinic acid, itraconazole and fumaric acid, itraconazole and tartaric acid, itraconazole and malic acid, itraconazoleHCl and tartaric acid, modafinil and malonic acid, modafinil and glycolic acid, modafinil and maleic acid, topiramate and 18-crown-6, 5-fluorouracil and urea, hydrochlorothiazide and nicotinic acid, hydrochlorothiazide and 18-crown-6, hydrochlorothiazide and piperazine, acetaminophen and 4,4'-bipyridine, phenytoin and pyridone, aspirin and 4,4'-bipyridine, ibuprofen and 4,4'-bipyridine, flurbiprofen and 4,4'-bipyridine, flurbiprofen and trans-1,2-bis(4-pyridyl) ethylene, carbamazepine and p-phthalaldehyde, carbamazepine and 2,6-pyridinecarboxylic acid, carbamazepine and 5-nitroisophthalic acid, carbamazepine and 1,3,5,7-adamantane tetracarboxylic acid, and carbamazepine and benzoquinone.

23. A process for modulating the solubility of an API for use in a pharmaceutical composition, which process comprises:

- (a) grinding, heating, co-subliming, co-melting, or contacting in solution the API with a co-crystal forming compound under crystallization conditions, so as to form a co-crystal of the API and the co-crystal forming compound;

- (b) isolating the co-crystal, wherein the co-crystal has a modulated solubility as compared to the API; and
- (c) incorporating the co-crystal having modulated solubility into a pharmaceutical composition.

24. The process of claim 23, wherein the solubility of the co-crystal is increased as compared to the API.

25. A process for modulating the dose response of an API for use in a pharmaceutical composition, which process comprises:

- (a) grinding, heating, co-subliming, co-melting, or contacting in solution the API with a co-crystal forming compound under crystallization conditions, so as to form a co-crystal of the API and the co-crystal forming compound;
- (b) isolating the co-crystal, wherein the co-crystal has a modulated dose response as compared to the API; and
- (c) incorporating the co-crystal having modulated dose response into a pharmaceutical composition.

26. The process of claim 25, wherein the dose response of the co-crystal is increased as compared to the API.

27. A process for modulating the dissolution of an API for use in a pharmaceutical composition, which process comprises:

- (a) grinding, heating, co-subliming, co-melting, or contacting in solution the API with a co-crystal forming compound under crystallization conditions, so as to form a co-crystal of the API and the co-crystal forming compound;
- (b) isolating the co-crystal, wherein the co-crystal has a modulated dissolution as compared to the API; and

- (c) incorporating the co-crystal having modulated dissolution into a pharmaceutical composition.

28. The process of claim 27, wherein the dissolution of the co-crystal is increased as compared to the API.

29. A process for modulating the bioavailability of an API for use in a pharmaceutical composition, which process comprises:

- (a) grinding, heating, co-subliming, co-melting, or contacting in solution the API with a co-crystal forming compound under crystallization conditions, so as to form a co-crystal of the API and the co-crystal forming compound;
- (b) isolating the co-crystal, wherein the co-crystal has a modulated bioavailability as compared to the API; and
- (c) incorporating the co-crystal having modulated bioavailability into a pharmaceutical composition.

30. The process of claim 29, wherein the bioavailability of the co-crystal is increased as compared to the API.

31. A process for increasing the stability of an API for use in a pharmaceutical composition, which process comprises:

- (a) grinding, heating, co-subliming, co-melting, or contacting in solution the API with a co-crystal forming compound under crystallization conditions, so as to form a co-crystal of the API and the co-crystal forming compound;
- (b) isolating the co-crystal, wherein the co-crystal has increased stability as compared to the API; and
- (c) incorporating the co-crystal having increased stability into a pharmaceutical composition.

32. A process for the incorporation of a difficult to salt or unsaltable API for use in a pharmaceutical composition, which process comprises:

- (a) grinding, heating, co-subliming, co-melting, or contacting in solution the API with a co-crystal forming compound under crystallization conditions, so as to form a co-crystal of the API and the co-crystal forming compound;
- (b) isolating the co-crystal;
- (c) incorporating the co-crystal having a difficult to salt or unsaltable API into a pharmaceutical composition.

33. A process for decreasing the hygroscopicity of an API for use in a pharmaceutical composition, which process comprises:

- (a) grinding, heating, co-subliming, co-melting, or contacting in solution the API with a co-crystal forming compound under crystallization conditions, so as to form a co-crystal of the API and the co-crystal forming compound;
- (b) isolating the co-crystal, wherein the co-crystal has decreased hygroscopicity as compared to the API; and
- (c) incorporating the co-crystal having decreased hygroscopicity into a pharmaceutical composition.

34. A process for crystallizing an amorphous API for use in a pharmaceutical composition, which process comprises:

- (a) grinding, heating, co-subliming, co-melting, or contacting in solution the API with a co-crystal forming compound under crystallization conditions, so as to form a co-crystal of the API and the co-crystal forming compound;
- (b) isolating the co-crystal;
- (c) incorporating the co-crystal into a pharmaceutical composition.



35. A process for decreasing the form diversity of an API for use in a pharmaceutical composition, which process includes:

- (a) grinding, heating, co-subliming, co-melting, or contacting in solution the API with a co-crystal forming compound under crystallization conditions, so as to form a co-crystal of the API and the co-crystal forming compound;
- (b) isolating the co-crystal, wherein the co-crystal has decreased form diversity as compared to the API; and
- (c) incorporating the co-crystal having decreased form diversity into a pharmaceutical composition.

36. A process for modulating the morphology of an API for use in a pharmaceutical composition, which process includes:

- (a) grinding, heating, co-subliming, co-melting, or contacting in solution the API with a co-crystal forming compound under crystallization conditions, so as to form a co-crystal of the API and the co-crystal forming compound;
- (b) isolating the co-crystal, wherein the co-crystal has a different morphology as compared to the API; and
- (c) incorporating the co-crystal having modulated morphology into a pharmaceutical composition.

37. The pharmaceutical co-crystal composition according to claims 1, 3, 5, or 7, wherein the API or co-crystal former comprises an amino-pyridine functional group as a hydrogen bonded moiety and another hydrogen bonded moiety comprises:

- (a) a primary amide;
- (b) a secondary amide;
- (c) a carboxylic acid;
- (d) water;
- (e) an alcohol;
- (f) a primary amine;

- (g) a secondary amine;
- (h) a carbonyl;
- (i) a sulfoxo moiety;
- (j) an ether;
- (k) an ester;
- (l) an aromatic N;
- (m) a cyano moiety;
- (n) a nitro moiety;
- (o) a chloride moiety;
- (p) a bromide moiety;
- (q) a primary amide where the interaction distance is between about 2.97 and about 3.07 angstroms;
- (r) a secondary amide where the interaction distance is between about 2.70 and about 3.20 angstroms;
- (s) a secondary amide where the interaction distance is between about 2.75 and about 3.17 angstroms;
- (t) a carboxylic acid where the interaction distance is between about 2.72 and about 3.07 angstroms;
- (u) a carboxylic acid where the interaction distance is between about 2.54 and about 2.82 angstroms;
- (v) water where the interaction distance is between about 2.72 and about 3.15 angstroms;
- (w) water where the interaction distance is between about 2.65 and about 3.15 angstroms;
- (x) an alcohol where the interaction distance is between about 2.78 and about 3.14 angstroms;
- (y) an alcohol where the interaction distance is between about 2.63 and about 3.06 angstroms;
- (z) a primary amine where the interaction distance is between about 2.85 and about 3.25 angstroms;

- (aa) a secondary amine where the interaction distance is between about 2.83 and about 3.25 angstroms;
- (bb) a carbonyl where the interaction distance is between about 2.87 and about 3.10 angstroms;
- (cc) a sulfoxo moiety where the interaction distance is between about 2.70 and about 3.10 angstroms;
- (dd) an ether where the interaction distance is between about 2.84 and about 3.20 angstroms;
- (ee) an ester where the interaction distance is about 3.09 angstroms;
- (ff) an ester where the interaction distance is between about 2.85 and about 3.16 angstroms;
- (gg) an aromatic N where the interaction distance is between about 2.78 and about 3.25 angstroms;
- (hh) a cyano moiety where the interaction distance is between about 2.83 and about 3.30 angstroms;
- (ii) a nitro moiety where the interaction distance is between about 2.85 and about 3.28 angstroms;
- (jj) a chloride moiety where the interaction distance is between about 3.10 and about 3.45 angstroms; or
- (kk) a bromide moiety where the interaction distance is between about 3.27 and about 3.48 angstroms.

38. The pharmaceutical co-crystal composition according to claims 1, 3, 5, or 7, wherein the API or co-crystal former comprises a primary amine functional group as a hydrogen bonded moiety and another hydrogen bonded moiety comprises:

- (a) a primary amide;
- (b) a secondary amide;
- (c) a carboxylic acid;
- (d) an amino-pyridine;
- (e) a sulfonamide;
- (f) water;

- (g) an alcohol;
- (h) a carbonyl;
- (i) a sulfoxo moiety;
- (j) a sulfonyl;
- (k) an ether;
- (l) an ester;
- (m) an aromatic N;
- (n) a cyano moiety;
- (o) a nitro moiety;
- (p) a chloride moiety;
- (q) a bromide moiety;
- (r) a primary amide where the interaction distance is between about 2.73 and about 3.20 angstroms;
- (s) a secondary amide where the interaction distance is between about 2.65 and about 3.20 angstroms;
- (t) a carboxylic acid where the interaction distance is between about 2.74 and about 3.15 angstroms;
- (u) a carboxylic acid where the interaction distance is between about 2.72 and about 3.12 angstroms;
- (v) an amino-pyridine where the interaction distance is between about 3.10 and about 3.24 angstroms;
- (w) a sulfonamide where the interaction distance is between about 2.86 and about 3.17 angstroms;
- (x) water where the interaction distance is between about 2.65 and about 3.17 angstroms;
- (y) an alcohol where the interaction distance is between about 2.63 and about 3.26 angstroms;
- (z) a carbonyl where the interaction distance is between about 2.64 and about 3.15 angstroms;
- (aa) a sulfoxo moiety where the interaction distance is between about 2.70 and about 3.10 angstroms;

- (bb) a sulfonyl where the interaction distance is between about 2.93 and about 3.12 angstroms;
- (cc) an ether where the interaction distance is between about 2.75 and about 3.25 angstroms;
- (dd) an ester where the interaction distance is between about 2.90 and about 3.20 angstroms;
- (ee) an ester where the interaction distance is between about 2.74 and about 3.27 angstroms;
- (ff) an aromatic N where the interaction distance is between about 2.92 and about 3.26 angstroms;
- (gg) a cyano moiety where the interaction distance is between about 2.83 and about 3.30 angstroms;
- (hh) a nitro moiety where the interaction distance is between about 2.75 and about 3.17 angstroms;
- (ii) a chloride moiety where the interaction distance is between about 3.07 and about 3.50 angstroms; or
- (jj) a bromide moiety where the interaction distance is between about 3.23 and about 3.60 angstroms.

39. The pharmaceutical co-crystal composition according to claims 1, 3, 5, or 7, wherein the API or co-crystal former comprises a primary sulfonamide functional group as a hydrogen bonded moiety and another hydrogen bonded moiety comprises:

- (a) water;
- (b) an alcohol;
- (c) a primary amine;
- (d) a secondary amine;
- (e) a sulfonyl;
- (f) an ether;
- (g) an ester;
- (h) a cyano moiety;
- (i) a nitro moiety;

- (j) a chloride moiety;
- (k) water where the interaction distance is about 2.87 angstroms;
- (l) an alcohol where the interaction distance is between about 2.85 and about 3.07 angstroms;
- (m) a primary amine where the interaction distance is between about 2.85 and about 3.20 angstroms;
- (n) a secondary amine where the interaction distance is between about 2.85 and about 3.20 angstroms;
- (o) a sulfonyl where the interaction distance is between about 2.85 and about 3.20 angstroms;
- (p) an ether where the interaction distance is between about 2.90 and about 3.20 angstroms;
- (q) an ester where the interaction distance is between about 2.85 and about 3.12 angstroms;
- (r) a cyano moiety where the interaction distance is about 3.00 angstroms;
- (s) a nitro moiety where the interaction distance is between about 3.00 and about 3.20 angstroms; or
- (t) a chloride moiety where the interaction distance is between about 3.20 and about 3.32 angstroms.

40. The pharmaceutical co-crystal composition according to claims 1, 3, 5, or 7, wherein the API or co-crystal former comprises a primary amide functional group as a hydrogen bonded moiety and another hydrogen bonded moiety comprises:

- (a) a secondary amide;
- (b) a carboxylic acid;
- (c) an amino-pyridine;
- (d) an aromatic N;
- (e) water;
- (f) an alcohol;
- (g) a secondary amine;
- (h) a carbonyl;



- (i) a sulfonyl;
- (j) an ether;
- (k) an ester;
- (l) a cyano moiety;
- (m) a nitro moiety;
- (n) a chloride moiety;
- (o) a bromide moiety;
- (p) a secondary amide where the interaction distance is between about 2.70 and about 3.15 angstroms;
- (q) a carboxylic acid where the interaction distance is between about 2.40 and about 2.80 angstroms;
- (r) a carboxylic acid where the interaction distance is between about 2.80 and about 3.25 angstroms;
- (s) an amino-pyridine where the interaction distance is between about 2.90 and about 3.20 angstroms;
- (t) an amino-pyridine where the interaction distance is between about 2.80 and about 3.10 angstroms;
- (u) an aromatic N where the interaction distance is between about 2.90 and about 3.21 angstroms;
- (v) water where the interaction distance is between about 2.60 and about 3.00 angstroms;
- (w) water where the interaction distance is between about 2.70 and about 3.07 angstroms;
- (x) an alcohol where the interaction distance is between about 2.50 and about 3.00 angstroms;
- (y) an alcohol where the interaction distance is between about 2.70 and about 3.10 angstroms;
- (z) a secondary amine where the interaction distance is between about 2.80 and about 3.10 angstroms;
- (aa) a secondary amine where the interaction distance is between about 3.00 and about 3.15 angstroms;

- (bb) a carbonyl where the interaction distance is between about 2.80 and about 3.15 angstroms;
- (cc) a sulfonyl where the interaction distance is between about 2.90 and about 3.00 angstroms;
- (dd) an ether where the interaction distance is between about 2.80 and about 3.10 angstroms;
- (ee) an ester where the interaction distance is between about 2.70 and about 3.05 angstroms;
- (ff) a cyano moiety where the interaction distance is between about 3.00 and about 3.30 angstroms;
- (gg) a nitro moiety where the interaction distance is between about 2.90 and about 3.07 angstroms;
- (hh) a chloride moiety where the interaction distance is between about 3.10 and about 3.60 angstroms; or
- (ii) a bromide moiety where the interaction distance is between about 3.30 and about 3.80 angstroms.

41. The pharmaceutical co-crystal composition according to claims 1, 3, 5, or 7, wherein the API or co-crystal former comprises a secondary amide functional group as a hydrogen bonded moiety and another hydrogen bonded moiety comprises:

- (a) a primary amide;
- (b) a carboxylic acid;
- (c) an amino-pyridine;
- (d) a sulfonamide;
- (e) an aromatic N;
- (f) water;
- (g) an alcohol;
- (h) a primary amine;
- (i) a secondary amine;
- (j) a carbonyl;
- (k) a sulfonyl;

- (l) an ether;
- (m) an ester;
- (n) a cyano moiety;
- (o) a nitro moiety;
- (p) a chloride moiety;
- (q) a bromide moiety;
- (r) a primary amide where the interaction distance is between about 2.70 and about 3.15 angstroms;
- (s) a carboxylic acid where the interaction distance is between about 2.70 and about 3.10 angstroms;
- (t) a carboxylic acid where the interaction distance is between about 2.40 and about 3.05 angstroms;
- (u) an amino-pyridine where the interaction distance is between about 2.70 and about 3.20 angstroms;
- (v) an amino-pyridine where the interaction distance is between about 2.75 and about 3.17 angstroms;
- (w) a sulfonamide where the interaction distance is between about 2.70 and about 3.00 angstroms;
- (x) an aromatic N where the interaction distance is between about 2.60 and about 3.15 angstroms;
- (y) water where the interaction distance is between about 2.40 and about 3.10 angstroms;
- (z) water where the interaction distance is between about 2.60 and about 3.10 angstroms;
- (aa) an alcohol where the interaction distance is between about 2.50 and about 3.04 angstroms;
- (bb) an alcohol where the interaction distance is between about 2.50 and about 3.20 angstroms;
- (cc) a primary amine where the interaction distance is between about 2.65 and about 3.20 angstroms;

- (dd) a secondary amine where the interaction distance is between about 2.60 and about 3.15 angstroms;
- (ee) a carbonyl where the interaction distance is between about 2.70 and about 3.07 angstroms;
- (ff) a sulfonyl where the interaction distance is between about 2.60 and about 3.25 angstroms;
- (gg) an ether where the interaction distance is between about 2.70 and about 3.16 angstroms;
- (hh) an ester where the interaction distance is between about 2.80 and about 3.16 angstroms;
- (ii) a cyano moiety where the interaction distance is between about 2.90 and about 3.30 angstroms;
- (jj) a nitro moiety where the interaction distance is between about 2.80 and about 3.10 angstroms;
- (kk) a chloride moiety where the interaction distance is between about 2.90 and about 3.40 angstroms; or
- (ll) a bromide moiety where the interaction distance is between about 3.10 and about 3.50 angstroms.

42. The pharmaceutical co-crystal composition according to claims 1, 3, 5, or 7, wherein the API or co-crystal former comprises an alcohol functional group as a hydrogen bonded moiety and another hydrogen bonded moiety comprises:

- (a) a primary amide;
- (b) a secondary amide;
- (c) a carboxylic acid;
- (d) an amino-pyridine;
- (e) a sulfonamide;
- (f) an aromatic N;
- (g) water;
- (h) a primary amine;
- (i) a secondary amine;

- (j) a carbonyl;
- (k) a sulfonyl;
- (l) an ether;
- (m) an ester;
- (n) a cyano moiety;
- (o) a nitro moiety;
- (p) a chloride moiety;
- (q) a bromide moiety;
- (r) a primary amide where the interaction distance is between about 2.50 and about 3.00 angstroms;
- (s) a primary amide where the interaction distance is between about 2.70 and about 3.10 angstroms;
- (t) a secondary amide where the interaction distance is between about 2.50 and about 3.04 angstroms;
- (u) a secondary amide where the interaction distance is between about 2.50 and about 3.20 angstroms;
- (v) a carboxylic acid where the interaction distance is between about 2.50 and about 3.00 angstroms;
- (w) a carboxylic acid where the interaction distance is between about 2.40 and about 2.90 angstroms;
- (x) an amino-pyridine where the interaction distance is between about 2.60 and about 3.06 angstroms;
- (y) an amino-pyridine where the interaction distance is between about 2.75 and about 3.15 angstroms;
- (z) a sulfonamide where the interaction distance is between about 2.80 and about 3.07 angstroms;
- (aa) an aromatic N where the interaction distance is between about 2.50 and about 3.00 angstroms;
- (bb) water where the interaction distance is between about 2.40 and about 3.03 angstroms;

- (cc) a primary amine where the interaction distance is between about 2.60 and about 3.15 angstroms;
- (dd) a secondary amine where the interaction distance is between about 2.60 and about 3.15 angstroms;
- (ee) a carbonyl where the interaction distance is between about 2.40 and about 3.05 angstroms;
- (ff) a sulfonyl where the interaction distance is between about 2.40 and about 3.15 angstroms;
- (gg) an ether where the interaction distance is between about 2.40 and about 3.00 angstroms;
- (hh) an ester where the interaction distance is between about 2.50 and about 3.10 angstroms;
- (ii) a cyano moiety where the interaction distance is between about 2.40 and about 3.10 angstroms;
- (jj) a nitro moiety where the interaction distance is between about 2.45 and about 3.05 angstroms;
- (kk) a chloride moiety where the interaction distance is between about 2.60 and about 3.30 angstroms; or
- (ll) a bromide moiety where the interaction distance is between about 3.00 and about 3.50 angstroms.

43. The pharmaceutical co-crystal composition according to claims 1, 3, 5, or 7, wherein the API or co-crystal former comprises a carboxylic acid functional group as a hydrogen bonded moiety and another hydrogen bonded moiety comprises:

- (a) a primary amide;
- (b) a secondary amide;
- (c) an amino-pyridine;
- (d) an aromatic N;
- (e) water;
- (f) an alcohol;
- (g) a primary amine;



- (h) a secondary amine;
- (i) a carbonyl;
- (j) an ether;
- (k) an ester;
- (l) a cyano moiety;
- (m) a nitro moiety;
- (n) a chloride moiety;
- (o) a bromide moiety;
- (p) a primary amide where the interaction distance is between about 2.80 and about 3.25 angstroms;
- (q) a primary amide where the interaction distance is between about 2.40 and about 2.80 angstroms;
- (r) a secondary amide where the interaction distance is between about 2.70 and about 3.10 angstroms;
- (s) a secondary amide where the interaction distance is between about 2.40 and about 3.05 angstroms;
- (t) an amino-pyridine where the interaction distance is between about 2.50 and about 2.80 angstroms;
- (u) an amino-pyridine where the interaction distance is between about 2.70 and about 3.00 angstroms;
- (v) an aromatic N where the interaction distance is between about 2.54 and about 2.94 angstroms;
- (w) water where the interaction distance is between about 2.50 and about 3.00 angstroms;
- (x) water where the interaction distance is between about 2.40 and about 3.00 angstroms;
- (y) an alcohol where the interaction distance is between about 2.50 and about 3.00 angstroms;
- (z) an alcohol where the interaction distance is between about 2.50 and about 2.90 angstroms;

- (aa) a primary amine where the interaction distance is between about 2.70 and about 3.10 angstroms;
- (bb) a secondary amine where the interaction distance is between about 2.70 and about 3.10 angstroms;
- (cc) a carbonyl where the interaction distance is between about 2.40 and about 3.00 angstroms;
- (dd) an ether where the interaction distance is between about 2.50 and about 3.00 angstroms;
- (ee) an ester where the interaction distance is between about 2.40 and about 3.05 angstroms;
- (ff) an ester where the interaction distance is between about 2.40 and about 3.10 angstroms;
- (gg) a cyano moiety where the interaction distance is between about 2.50 and about 2.80 angstroms;
- (hh) a nitro moiety where the interaction distance is between about 2.70 and about 3.05 angstroms;
- (ii) a chloride moiety where the interaction distance is between about 2.80 and about 3.20 angstroms; or
- (jj) a bromide moiety where the interaction distance is between about 3.00 and about 3.30 angstroms.

44. The pharmaceutical co-crystal composition according to claims 1, 3, 5, or 7, wherein the API or co-crystal former comprises a carbonyl functional group as a hydrogen bonded moiety and another hydrogen bonded moiety comprises:

- (a) a primary amide;
- (b) a secondary amide;
- (c) a carboxylic acid;
- (d) an amino-pyridine;
- (e) a secondary sulfonamide;
- (f) water;
- (g) an alcohol;

- (h) a primary amine;
- (i) a secondary amine;
- (j) a primary amide where the interaction distance is between about 2.83 and about 3.15 angstroms;
- (k) a secondary amide where the interaction distance is between about 2.70 and about 3.07 angstroms;
- (l) a carboxylic acid where the interaction distance is between about 2.40 and about 3.00 angstroms;
- (m) an amino-pyridine where the interaction distance is between about 2.87 and about 3.10 angstroms;
- (n) a secondary sulfonamide where the interaction distance is between about 2.76 and about 3.22 angstroms;
- (o) water where the interaction distance is between about 2.55 and about 3.05 angstroms;
- (p) an alcohol where the interaction distance is between about 2.40 and about 3.05 angstroms;
- (q) a primary amine where the interaction distance is between about 2.64 and about 3.15 angstroms; or
- (r) a secondary amine where the interaction distance is between about 2.64 and about 3.15 angstroms.

45. The pharmaceutical co-crystal composition according to claims 1, 3, 5, or 7, wherein the API or co-crystal former comprises a cyano group as a hydrogen bonded moiety and another hydrogen bonded moiety comprises:

- (a) a primary amide;
- (b) a secondary amide;
- (c) a carboxylic acid;
- (d) an amino-pyridine;
- (e) a primary sulfonamide;
- (f) a secondary sulfonamide;
- (g) water;

- (h) an alcohol;
- (i) a primary amine;
- (j) a secondary amine;
- (k) a primary amide where the interaction distance is between about 3.01 and about 3.30 angstroms;
- (l) a secondary amide where the interaction distance is between about 2.90 and about 3.30 angstroms;
- (m) a carboxylic acid where the interaction distance is between about 2.57 and about 3.00 angstroms;
- (n) an amino-pyridine where the interaction distance is between about 2.84 and about 3.33 angstroms;
- (o) a primary sulfonamide where the interaction distance is about 2.99 angstroms;
- (p) a secondary sulfonamide where the interaction distance is between about 2.83 and about 3.00 angstroms;
- (q) water where the interaction distance is between about 2.78 and about 3.20 angstroms;
- (r) an alcohol where the interaction distance is between about 2.72 and about 3.13 angstroms;
- (s) a primary amine where the interaction distance is between about 2.84 and about 3.27 angstroms; or
- (t) a secondary amine where the interaction distance is between about 2.84 and about 3.30 angstroms.

46. The pharmaceutical co-crystal composition according to claims 1, 3, 5, or 7, wherein the API or co-crystal former comprises a sulfonyl group as a hydrogen bonded moiety and another hydrogen bonded moiety comprises:

- (a) a primary amide;
- (b) a secondary amide;
- (c) a primary sulfonamide;
- (d) a secondary sulfonamide;

- (e) water;
- (f) an alcohol;
- (g) a primary amine;
- (h) a secondary amine;
- (i) a primary amide where the interaction distance is about 2.92 angstroms;
- (j) a secondary amide where the interaction distance is between about 2.95 and about 3.25 angstroms;
- (k) a primary sulfonamide where the interaction distance is between about 2.85 and about 3.10 angstroms;
- (l) a secondary sulfonamide where the interaction distance is between about 2.85 and about 3.20 angstroms;
- (m) water where the interaction distance is between about 2.84 and about 3.00 angstroms;
- (n) an alcohol where the interaction distance is between about 2.65 and about 3.15 angstroms;
- (o) a primary amine where the interaction distance is between about 2.93 and about 3.32 angstroms; or
- (p) a secondary amide where the interaction distance is between about 2.75 and about 3.32 angstroms.

47. The pharmaceutical co-crystal composition according to claims 1, 3, 5, or 7, wherein the API or co-crystal former comprises an aromatic N as a hydrogen bonded moiety and another hydrogen bonded moiety comprises:

- (a) a primary amide;
- (b) a secondary amide;
- (c) a carboxylic acid;
- (d) an amino-pyridine;
- (e) water;
- (f) an alcohol;
- (g) a primary amine;
- (h) a secondary amine;

- (i) a primary amide where the interaction distance is between about 2.90 and about 3.21 angstroms;
- (j) a secondary amide where the interaction distance is between about 2.60 and about 3.15 angstroms;
- (k) a carboxylic acid where the interaction distance is between about 2.54 and about 2.94 angstroms;
- (l) an amino-pyridine where the interaction distance is between about 2.70 and about 3.20 angstroms;
- (m) water where the interaction distance is between about 2.60 and about 3.15 angstroms;
- (n) an alcohol where the interaction distance is between about 2.50 and about 3.00 angstroms;
- (o) a primary amine where the interaction distance is between about 2.92 and about 3.26 angstroms; or
- (p) a secondary amine where the interaction distance is between about 2.73 and about 3.25 angstroms.

48. The pharmaceutical co-crystal composition according to claims 1, 3, 5, or 7, wherein the API or co-crystal former comprises an ether functional group as a hydrogen bonded moiety and another hydrogen bonded moiety comprises:

- (a) a primary amide;
- (b) a secondary amide;
- (c) a carboxylic acid;
- (d) an amino-pyridine;
- (e) a sulfonamide;
- (f) water;
- (g) an alcohol;
- (h) a primary amine;
- (i) a secondary amine;
- (j) a primary amide where the interaction distance is between about 2.80 and about 3.10 angstroms;



- (k) a secondary amide where the interaction distance is between about 2.70 and about 3.16 angstroms;
- (l) a carboxylic acid where the interaction distance is between about 2.50 and about 3.02 angstroms;
- (m) an amino-pyridine where the interaction distance is between about 2.80 and about 3.20 angstroms;
- (n) a sulfonamide where the interaction distance is less than about 3.20 angstroms;
- (o) water where the interaction distance is between about 2.40 and about 3.15 angstroms;
- (p) an alcohol where the interaction distance is between about 2.40 and about 3.00 angstroms;
- (q) a primary amine where the interaction distance is between about 2.75 and about 3.25 angstroms; or
- (r) a secondary amine where the interaction distance is between about 2.60 and about 3.25 angstroms.

49. The pharmaceutical co-crystal composition according to claims 1, 3, 5, or 7, wherein the API or co-crystal former comprises a chloride moiety as a hydrogen bonded moiety and another hydrogen bonded moiety comprises:

- (a) a primary amide;
- (b) a secondary amide;
- (c) a carboxylic acid;
- (d) an amino-pyridine;
- (e) a sulfonamide;
- (f) water;
- (g) an alcohol;
- (h) a primary amine;
- (i) a secondary amine;
- (j) a primary amide where the interaction distance is between about 3.10 and about 3.60 angstroms;

- (k) a secondary amide where the interaction distance is between about 2.90 and about 3.30 angstroms;
- (l) a carboxylic acid where the interaction distance is between about 2.80 and about 3.30 angstroms;
- (m) an amino-pyridine where the interaction distance is between about 3.10 and about 3.45 angstroms;
- (n) a sulfonamide where the interaction distance is less than about 3.35 angstroms;
- (o) water where the interaction distance is between about 2.70 and about 3.30 angstroms;
- (p) an alcohol where the interaction distance is between about 2.50 and about 3.30 angstroms;
- (q) a primary amine where the interaction distance is between about 3.00 and about 3.50 angstroms; or
- (r) a secondary amine where the interaction distance is between about 2.90 and about 3.40 angstroms.

50. The pharmaceutical co-crystal composition according to claims 1, 3, 5, or 7, wherein the API or co-crystal former comprises an organochloride moiety as a hydrogen bonded moiety and another hydrogen bonded moiety comprises:

- (a) a primary amide;
- (b) a secondary amide;
- (c) a carboxylic acid;
- (d) an amino-pyridine;
- (e) a sulfonamide;
- (f) water;
- (g) an alcohol;
- (h) a primary amine;
- (i) a secondary amine;
- (j) a primary amide where the interaction distance is between about 3.18 and about 3.21 angstroms;

- (k) a secondary amide where the interaction distance is between about 3.20 and about 3.27 angstroms;
- (l) a carboxylic acid where the interaction distance is between about 2.90 and about 3.23 angstroms;
- (m) an amino-pyridine where the interaction distance is between about 3.28 and about 3.33 angstroms;
- (n) a sulfonamide where the interaction distance is less than about 3.50 angstroms;
- (o) water where the interaction distance is between about 2.79 and about 3.26 angstroms;
- (p) an alcohol where the interaction distance is between about 2.90 and about 3.29 angstroms;
- (q) a primary amine where the interaction distance is between about 3.21 and about 3.29 angstroms; or
- (r) a secondary amine where the interaction distance is between about 3.26 and about 3.30 angstroms.

51. The pharmaceutical co-crystal composition according to claims 1, 3, 5, or 7, wherein the API or co-crystal former comprises a bromide moiety as a hydrogen bonded moiety and another hydrogen bonded moiety comprises:

- (a) a primary amide;
- (b) a secondary amide;
- (c) a carboxylic acid;
- (d) an amino-pyridine;
- (e) an alcohol;
- (f) a primary amine;
- (g) a secondary amine;
- (h) a primary amide where the interaction distance is between about 3.30 and about 3.80 angstroms;
- (i) a secondary amide where the interaction distance is between about 3.10 and about 3.80 angstroms;

- (j) a carboxylic acid where the interaction distance is between about 3.00 and about 3.30 angstroms;
- (k) an amino-pyridine where the interaction distance is between about 3.20 and about 3.50 angstroms;
- (l) an alcohol where the interaction distance is between about 3.00 and about 3.50 angstroms;
- (m) a primary amine where the interaction distance is between about 3.20 and about 3.60 angstroms; or
- (n) a secondary amine where the interaction distance is between about 3.10 and about 3.60 angstroms.

52. The pharmaceutical co-crystal composition according to claims 1, 3, 5, or 7, wherein the API or co-crystal former comprises an organobromide moiety as a hydrogen bonded moiety and another hydrogen bonded moiety comprises:

- (a) a primary amide;
- (b) a secondary amide;
- (c) a carboxylic acid;
- (d) an amino-pyridine;
- (e) a sulfonamide;
- (f) water;
- (g) an alcohol;
- (h) a primary amine;
- (i) a secondary amine;
- (j) a primary amide where the interaction distance is less than about 3.50 angstroms;
- (k) a secondary amide where the interaction distance is less than about 3.50 angstroms;
- (l) a carboxylic acid where the interaction distance is between about 3.01 and about 3.31 angstroms;
- (m) an amino-pyridine where the interaction distance is less than about 3.50 angstroms;

- (n) a sulfonamide where the interaction distance is less than about 3.50 angstroms;
- (o) water where the interaction distance is between about 3.14 and about 3.27 angstroms;
- (p) an alcohol where the interaction distance is between about 2.90 and about 3.36 angstroms;
- (q) a primary amine where the interaction distance is less than about 3.50 angstroms; or
- (r) a secondary amine where the interaction distance is between about 3.20 and about 3.39 angstroms.

53. The pharmaceutical co-crystal composition according to claims 1, 3, 5, or 7, wherein the API or co-crystal former comprises an organoiodide moiety as a hydrogen bonded moiety and another hydrogen bonded moiety comprises:

- (a) a primary amide;
- (b) a secondary amide;
- (c) a carboxylic acid;
- (d) an amino-pyridine;
- (e) an aromatic N;
- (f) an alcohol;
- (g) a primary amine;
- (h) a secondary amine;
- (i) a primary amide where the interaction distance is less than about 3.80 angstroms;
- (j) a secondary amide where the interaction distance is less than about 3.80 angstroms;
- (k) a carboxylic acid where the interaction distance is less than about 3.80 angstroms;
- (l) an amino-pyridine where the interaction distance is less than about 3.80 angstroms;

- (m) an aromatic N where the interaction distance is between about 2.70 and about 3.23 angstroms;
- (n) an alcohol where the interaction distance is between about 2.90 and about 3.48 angstroms;
- (o) a primary amine where the interaction distance is between about 3.25 and about 3.42 angstroms; or
- (p) a secondary amine where the interaction distance is between about 2.71 and about 2.87 angstroms.

54. The pharmaceutical co-crystal composition according to claims 1 or 3, wherein the API forms a dimeric primary amide structure via hydrogen bonds with an  $R^2_2$  (8) motif, and further wherein the composition comprises:

- (a) at least one hydrogen bond donor;
- (b) at least two hydrogen bond donors;
- (c) at least three hydrogen bond donors;
- (d) at least four hydrogen bond donors;
- (e) at least one hydrogen bond acceptor;
- (f) at least two hydrogen bond acceptors;
- (g) at least one hydrogen bond donor and one hydrogen bond acceptor;
- (h) at least two hydrogen bond donors and one hydrogen bond acceptor;
- (i) at least one hydrogen bond donor and two hydrogen bond acceptors;
- (j) at least two hydrogen bond donors and two hydrogen bond acceptors; or
- (k) at least three hydrogen bond donors and one hydrogen bond acceptor.

55. The co-crystal according to claim 11, wherein:

- (a) the co-crystal is characterized by a powder X-ray diffraction pattern comprising peaks expressed in terms of 2-theta angles, wherein:
  - (i) said co-crystal is a celecoxib:nicotinamide co-crystal and said X-ray diffraction pattern comprises peaks at 3.77, 9.63, and 17.78 degrees;



- (ii) said co-crystal is a celecoxib:nicotinamide co-crystal and said X-ray diffraction pattern comprises peaks at 9.63, 20.44, and 22.10 degrees;
- (iii) said co-crystal is a celecoxib:nicotinamide co-crystal and said X-ray diffraction pattern comprises peaks at 14.76 and 21.19 degrees;
- (iv) said co-crystal is a celecoxib:nicotinamide co-crystal and said X-ray diffraction pattern comprises peaks at 3.77 and 19.31 degrees;
- (v) said co-crystal is a celecoxib:nicotinamide co-crystal and said X-ray diffraction pattern comprises peaks at 17.78 and 20.44 degrees;
- (vi) said co-crystal is a celecoxib:nicotinamide co-crystal and said X-ray diffraction pattern comprises a peak at 3.77 degrees; or
- (vii) said co-crystal is a celecoxib:nicotinamide co-crystal and said X-ray diffraction pattern comprises a peak at 17.78 degrees;
- (b) the co-crystal is characterized by a DSC thermogram, wherein said co-crystal is a celecoxib:nicotinamide co-crystal and said DSC thermogram comprises an endothermic transition at about 130 degrees C; or
- (c) the co-crystal is characterized by a Raman spectrum comprising peaks expressed in terms of  $\text{cm}^{-1}$ , wherein:
  - (i) said co-crystal is a celecoxib:nicotinamide co-crystal and said Raman spectrum comprises peaks at 1599, 1162, and 1044;
  - (ii) said co-crystal is a celecoxib:nicotinamide co-crystal and said Raman spectrum comprises peaks at 1618, 1044, and 796;
  - (iii) said co-crystal is a celecoxib:nicotinamide co-crystal and said Raman spectrum comprises peaks at 1599 and 1044;
  - (iv) said co-crystal is a celecoxib:nicotinamide co-crystal and said Raman spectrum comprises a peak at 1044;
  - (v) said co-crystal is a celecoxib:nicotinamide co-crystal and said Raman spectrum comprises a peak at 1618; or
  - (vi) said co-crystal is a celecoxib:nicotinamide co-crystal and said Raman spectrum comprises a peak at 1599.

56. The co-crystal according to claim 11, wherein:

- (a) the co-crystal is characterized by a powder X-ray diffraction pattern comprising peaks expressed in terms of 2-theta angles, wherein:
  - (i) said co-crystal is a celecoxib:18-crown-6 co-crystal and said X-ray diffraction pattern comprises peaks at 8.73, 13.13, and 18.45 degrees;
  - (ii) said co-crystal is a celecoxib:18-crown-6 co-crystal and said X-ray diffraction pattern comprises peaks at 8.73, 11.89, and 17.75 degrees;
  - (iii) said co-crystal is a celecoxib:18-crown-6 co-crystal and said X-ray diffraction pattern comprises peaks at 16.37, 18.45, and 23.11 degrees;
  - (iv) said co-crystal is a celecoxib:18-crown-6 co-crystal and said X-ray diffraction pattern comprises peaks at 17.75 and 20.75 degrees;
  - (v) said co-crystal is a celecoxib:18-crown-6 co-crystal and said X-ray diffraction pattern comprises peaks at 8.73 and 13.13 degrees;
  - (vi) said co-crystal is a celecoxib:18-crown-6 co-crystal and said X-ray diffraction pattern comprises peaks at 11.89 and 22.37 degrees;
  - (vii) said co-crystal is a celecoxib:18-crown-6 co-crystal and said X-ray diffraction pattern comprises a peak at 8.73 degrees;
  - (viii) said co-crystal is a celecoxib:18-crown-6 co-crystal and said X-ray diffraction pattern comprises a peak at 11.89 degrees; or
  - (ix) said co-crystal is a celecoxib:18-crown-6 co-crystal and said X-ray diffraction pattern comprises a peak at 17.75 degrees; or
- (b) the co-crystal is characterized by a DSC thermogram, wherein said co-crystal is a celecoxib:18-crown-6 co-crystal and said DSC thermogram comprises an endothermic transition at about 190 degrees C.

57. The co-crystal according to claim 11, wherein:

- (a) the co-crystal is characterized by a powder X-ray diffraction pattern comprising peaks expressed in terms of 2-theta angles, wherein:

- (i) said co-crystal is a topiramate:18-crown-6 co-crystal and said X-ray diffraction pattern comprises peaks at 11.07, 13.83, and 18.03 degrees;
  - (ii) said co-crystal is a topiramate:18-crown-6 co-crystal and said X-ray diffraction pattern comprises peaks at 10.79, 16.13, and 18.51 degrees;
  - (iii) said co-crystal is a topiramate:18-crown-6 co-crystal and said X-ray diffraction pattern comprises peaks at 12.17, 18.03, and 21.43 degrees;
  - (iv) said co-crystal is a topiramate:18-crown-6 co-crystal and said X-ray diffraction pattern comprises peaks at 11.07 and 18.03 degrees;
  - (v) said co-crystal is a topiramate:18-crown-6 co-crystal and said X-ray diffraction pattern comprises peaks at 12.17 and 18.51 degrees;
  - (vi) said co-crystal is a topiramate:18-crown-6 co-crystal and said X-ray diffraction pattern comprises peaks at 16.13 and 21.43 degrees;
  - (vii) said co-crystal is a topiramate:18-crown-6 co-crystal and said X-ray diffraction pattern comprises a peak at 11.07 degrees; or
  - (viii) said co-crystal is a topiramate:18-crown-6 co-crystal and said X-ray diffraction pattern comprises a peak at 13.83 degrees; or
- (b) the co-crystal is characterized by a DSC thermogram, wherein said co-crystal is a topiramate:18-crown-6 co-crystal and said DSC thermogram comprises an endothermic transition at about 135 degrees C.

58. The co-crystal according to claim 11, wherein:

- (a) the co-crystal is characterized by a powder X-ray diffraction pattern comprising peaks expressed in terms of 2-theta angles, wherein:
  - (i) said co-crystal is an olanzapine:nicotinamide form I co-crystal and said X-ray diffraction pattern comprises peaks at 4.89, 8.65, and 17.15 degrees;

- (ii) said co-crystal is an olanzapine:nicotinamide form I co-crystal and said X-ray diffraction pattern comprises peaks at 17.15, 23.95, and 25.53 degrees;
- (iii) said co-crystal is an olanzapine:nicotinamide form I co-crystal and said X-ray diffraction pattern comprises peaks at 8.65, 19.71, and 26.71 degrees;
- (iv) said co-crystal is an olanzapine:nicotinamide form I co-crystal and said X-ray diffraction pattern comprises peaks at 4.89 and 17.15 degrees;
- (v) said co-crystal is an olanzapine:nicotinamide form I co-crystal and said X-ray diffraction pattern comprises peaks at 8.65 and 23.95 degrees;
- (vi) said co-crystal is an olanzapine:nicotinamide form I co-crystal and said X-ray diffraction pattern comprises peaks at 23.95 and 25.53 degrees;
- (vii) said co-crystal is an olanzapine:nicotinamide form I co-crystal and said X-ray diffraction pattern comprises a peak at 4.89 degrees; or
- (viii) said co-crystal is an olanzapine:nicotinamide form I co-crystal and said X-ray diffraction pattern comprises a peak at 17.15 degrees; or
- (b) the co-crystal is characterized by a DSC thermogram, wherein said co-crystal is an olanzapine:nicotinamide form I co-crystal and said DSC thermogram comprises an endothermic transition at about 126 degrees C.

59. The co-crystal according to claim 11, wherein the co-crystal is characterized by a powder X-ray diffraction pattern comprising peaks expressed in terms of 2-theta angles, wherein:

- (a) said co-crystal is an olanzapine:nicotinamide form II co-crystal and said X-ray diffraction pattern comprises peaks at 8.65, 17.53, and 24.19 degrees;

- (b) said co-crystal is an olanzapine:nicotinamide form II co-crystal and said X-ray diffraction pattern comprises peaks at 11.87, 14.53, and 19.69 degrees;
- (c) said co-crystal is an olanzapine:nicotinamide form II co-crystal and said X-ray diffraction pattern comprises peaks at 8.65, 17.53, and 18.09 degrees;
- (d) said co-crystal is an olanzapine:nicotinamide form II co-crystal and said X-ray diffraction pattern comprises peaks at 11.87 and 17.53 degrees;
- (e) said co-crystal is an olanzapine:nicotinamide form II co-crystal and said X-ray diffraction pattern comprises peaks at 8.65 and 14.53 degrees;
- (f) said co-crystal is an olanzapine:nicotinamide form II co-crystal and said X-ray diffraction pattern comprises peaks at 11.87 and 24.19 degrees;
- (g) said co-crystal is an olanzapine:nicotinamide form II co-crystal and said X-ray diffraction pattern comprises a peak at 8.65 degrees;
- (h) said co-crystal is an olanzapine:nicotinamide form II co-crystal and said X-ray diffraction pattern comprises a peak at 17.53 degrees; or
- (i) said co-crystal is an olanzapine:nicotinamide form II co-crystal and said X-ray diffraction pattern comprises a peak at 11.87 degrees.

60. The co-crystal according to claim 11, wherein the co-crystal is characterized by a powder X-ray diffraction pattern comprising peaks expressed in terms of 2-theta angles, wherein:

- (a) said co-crystal is an olanzapine:nicotinamide form III co-crystal and said X-ray diffraction pattern comprises peaks at 6.41, 12.85, and 18.67 degrees;
- (b) said co-crystal is an olanzapine:nicotinamide form III co-crystal and said X-ray diffraction pattern comprises peaks at 12.85, 21.85, and 24.37 degrees;

- (c) said co-crystal is an olanzapine:nicotinamide form III co-crystal and said X-ray diffraction pattern comprises peaks at 14.91, 18.67, and 21.85 degrees;
- (d) said co-crystal is an olanzapine:nicotinamide form III co-crystal and said X-ray diffraction pattern comprises peaks at 6.41 and 12.85 degrees;
- (e) said co-crystal is an olanzapine:nicotinamide form III co-crystal and said X-ray diffraction pattern comprises peaks at 6.41 and 18.67 degrees;
- (f) said co-crystal is an olanzapine:nicotinamide form III co-crystal and said X-ray diffraction pattern comprises peaks at 12.85 and 18.67 degrees;
- (g) said co-crystal is an olanzapine:nicotinamide form III co-crystal and said X-ray diffraction pattern comprises a peak at 6.41 degrees;
- (h) said co-crystal is an olanzapine:nicotinamide form III co-crystal and said X-ray diffraction pattern comprises a peak at 12.85 degrees; or
- (i) said co-crystal is an olanzapine:nicotinamide form III co-crystal and said X-ray diffraction pattern comprises a peak at 18.67 degrees.

61. The co-crystal according to claim 11, wherein:

- (a) the co-crystal is characterized by a powder X-ray diffraction pattern comprising peaks expressed in terms of 2-theta angles, wherein:
  - (i) said co-crystal is a *cis*-itraconazole:succinic acid co-crystal and said X-ray diffraction pattern comprises peaks at 3.01, 16.17, and 17.29 degrees;
  - (ii) said co-crystal is a *cis*-itraconazole:succinic acid co-crystal and said X-ray diffraction pattern comprises peaks at 6.01, 15.87, and 24.47 degrees;



- (iii) said co-crystal is a *cis*-itraconazole:succinic acid co-crystal and said X-ray diffraction pattern comprises peaks at 9.05, 20.41, and 22.27 degrees;
  - (iv) said co-crystal is a *cis*-itraconazole:succinic acid co-crystal and said X-ray diffraction pattern comprises peaks at 3.01 and 17.29 degrees;
  - (v) said co-crystal is a *cis*-itraconazole:succinic acid co-crystal and said X-ray diffraction pattern comprises peaks at 6.01 and 16.17 degrees;
  - (vi) said co-crystal is a *cis*-itraconazole:succinic acid co-crystal and said X-ray diffraction pattern comprises peaks at 9.05 and 22.27 degrees;
  - (vii) said co-crystal is a *cis*-itraconazole:succinic acid co-crystal and said X-ray diffraction pattern comprises a peak at 3.01 degrees;
  - (viii) said co-crystal is a *cis*-itraconazole:succinic acid co-crystal and said X-ray diffraction pattern comprises a peak at 16.17 degrees; or
  - (ix) said co-crystal is a *cis*-itraconazole:succinic acid co-crystal and said X-ray diffraction pattern comprises a peak at 17.29 degrees; or
- (b) the co-crystal is characterized by a DSC thermogram, wherein said co-crystal is a *cis*-itraconazole:succinic acid co-crystal and said DSC thermogram comprises an endothermic transition at about 160 degrees C.

62. The co-crystal according to claim 11, wherein:

- (a) the co-crystal is characterized by a powder X-ray diffraction pattern comprising peaks expressed in terms of 2-theta angles, wherein:
  - (i) said co-crystal is a *cis*-itraconazole:fumaric acid co-crystal and said X-ray diffraction pattern comprises peaks at 4.61, 5.89, and 10.57 degrees;
  - (ii) said co-crystal is a *cis*-itraconazole:fumaric acid co-crystal and said X-ray diffraction pattern comprises peaks at 9.23, 19.05, and 20.79 degrees;

- (iii) said co-crystal is a *cis*-itraconazole:fumaric acid co-crystal and said X-ray diffraction pattern comprises peaks at 15.51, 16.23, and 16.93 degrees;
  - (iv) said co-crystal is a *cis*-itraconazole:fumaric acid co-crystal and said X-ray diffraction pattern comprises peaks at 4.61 and 20.79 degrees;
  - (v) said co-crystal is a *cis*-itraconazole:fumaric acid co-crystal and said X-ray diffraction pattern comprises peaks at 5.89 and 19.05 degrees;
  - (vi) said co-crystal is a *cis*-itraconazole:fumaric acid co-crystal and said X-ray diffraction pattern comprises peaks at 10.57 and 16.23 degrees;
  - (vii) said co-crystal is a *cis*-itraconazole:fumaric acid co-crystal and said X-ray diffraction pattern comprises a peak at 4.61 degrees;
  - (viii) said co-crystal is a *cis*-itraconazole:fumaric acid co-crystal and said X-ray diffraction pattern comprises a peak at 5.89 degrees;
  - (ix) said co-crystal is a *cis*-itraconazole:fumaric acid co-crystal and said X-ray diffraction pattern comprises a peak at 10.57 degrees; or
  - (x) said co-crystal is a *cis*-itraconazole:fumaric acid co-crystal and said X-ray diffraction pattern comprises a peak at 19.05 degrees; or
- (b) the co-crystal is characterized by a DSC thermogram, wherein said co-crystal is a *cis*-itraconazole:fumaric acid co-crystal and said DSC thermogram comprises an endothermic transition at about 180 degrees C.

63. The co-crystal according to claim 11, wherein:

- (a) the co-crystal is characterized by a powder X-ray diffraction pattern comprising peaks expressed in terms of 2-theta angles, wherein:
  - (i) said co-crystal is a *cis*-itraconazole:L-tartaric acid co-crystal and said X-ray diffraction pattern comprises peaks at 4.13, 6.19, and 8.49 degrees;

- (ii) said co-crystal is a *cis*-itraconazole:L-tartaric acid co-crystal and said X-ray diffraction pattern comprises peaks at 6.19, 16.13, and 17.23 degrees;
  - (iii) said co-crystal is a *cis*-itraconazole:L-tartaric acid co-crystal and said X-ray diffraction pattern comprises peaks at 8.49, 18.07, and 20.79 degrees;
  - (iv) said co-crystal is a *cis*-itraconazole:L-tartaric acid co-crystal and said X-ray diffraction pattern comprises peaks at 4.13 and 8.49 degrees;
  - (v) said co-crystal is a *cis*-itraconazole:L-tartaric acid co-crystal and said X-ray diffraction pattern comprises peaks at 6.19 and 20.79 degrees;
  - (vi) said co-crystal is a *cis*-itraconazole:L-tartaric acid co-crystal and said X-ray diffraction pattern comprises peaks at 16.13 and 17.23 degrees;
  - (vii) said co-crystal is a *cis*-itraconazole:L-tartaric acid co-crystal and said X-ray diffraction pattern comprises a peak at 4.13 degrees;
  - (viii) said co-crystal is a *cis*-itraconazole:L-tartaric acid co-crystal and said X-ray diffraction pattern comprises a peak at 6.19 degrees; or
  - (ix) said co-crystal is a *cis*-itraconazole:L-tartaric acid co-crystal and said X-ray diffraction pattern comprises a peak at 8.49 degrees; or
- (b) the co-crystal is characterized by a DSC thermogram, wherein said co-crystal is a *cis*-itraconazole:L-tartaric acid co-crystal and said DSC thermogram comprises an endothermic transition at about 181 degrees C.

64. The co-crystal according to claim 11, wherein:

- (a) the co-crystal is characterized by a powder X-ray diffraction pattern comprising peaks expressed in terms of 2-theta angles, wherein:
  - (i) said co-crystal is a *cis*-itraconazole:L-malic acid co-crystal and said X-ray diffraction pattern comprises peaks at 6.07, 8.85, and 17.05 degrees;

- (ii) said co-crystal is a *cis*-itraconazole:L-malic acid co-crystal and said X-ray diffraction pattern comprises peaks at 15.93, 20.49, and 22.85 degrees;
  - (iii) said co-crystal is a *cis*-itraconazole:L-malic acid co-crystal and said X-ray diffraction pattern comprises peaks at 8.85, 15.93 and 26.17 degrees;
  - (iv) said co-crystal is a *cis*-itraconazole:L-malic acid co-crystal and said X-ray diffraction pattern comprises peaks at 6.07 and 17.05 degrees;
  - (v) said co-crystal is a *cis*-itraconazole:L-malic acid co-crystal and said X-ray diffraction pattern comprises peaks at 8.85 and 21.27 degrees;
  - (vi) said co-crystal is a *cis*-itraconazole:L-malic acid co-crystal and said X-ray diffraction pattern comprises peaks at 6.07 and 8.85 degrees;
  - (vii) said co-crystal is a *cis*-itraconazole:L-malic acid co-crystal and said X-ray diffraction pattern comprises a peak at 6.07 degrees;
  - (viii) said co-crystal is a *cis*-itraconazole:L-malic acid co-crystal and said X-ray diffraction pattern comprises a peak at 8.85 degrees; or
  - (ix) said co-crystal is a *cis*-itraconazole:L-malic acid co-crystal and said X-ray diffraction pattern comprises a peak at 17.05 degrees; or
- (b) the co-crystal is characterized by a DSC thermogram, wherein said co-crystal is a *cis*-itraconazole:L-malic acid co-crystal and said DSC thermogram comprises an endothermic transition at about 154 degrees C.

65. The co-crystal according to claim 11, wherein:

- (a) the co-crystal is characterized by a powder X-ray diffraction pattern comprising peaks expressed in terms of 2-theta angles, wherein:
  - (i) said co-crystal is a *cis*-itraconazoleHCl:DL-tartaric acid co-crystal and said X-ray diffraction pattern comprises peaks at 3.73, 10.95, and 13.83 degrees;

- (ii) said co-crystal is a *cis*-itraconazoleHCl:DL-tartaric acid co-crystal and said X-ray diffraction pattern comprises peaks at 16.53, 17.75, and 19.65 degrees;
  - (iii) said co-crystal is a *cis*-itraconazoleHCl:DL-tartaric acid co-crystal and said X-ray diffraction pattern comprises peaks at 10.95, 16.53, and 21.11 degrees;
  - (iv) said co-crystal is a *cis*-itraconazoleHCl:DL-tartaric acid co-crystal and said X-ray diffraction pattern comprises peaks at 3.73 and 10.95 degrees;
  - (v) said co-crystal is a *cis*-itraconazoleHCl:DL-tartaric acid co-crystal and said X-ray diffraction pattern comprises peaks at 13.83 and 17.75 degrees;
  - (vi) said co-crystal is a *cis*-itraconazoleHCl:DL-tartaric acid co-crystal and said X-ray diffraction pattern comprises peaks at 16.53 and 19.65 degrees;
  - (vii) said co-crystal is a *cis*-itraconazoleHCl:DL-tartaric acid co-crystal and said X-ray diffraction pattern comprises a peak at 3.73 degrees;
  - (viii) said co-crystal is a *cis*-itraconazoleHCl:DL-tartaric acid co-crystal and said X-ray diffraction pattern comprises a peak at 10.95 degrees; or
  - (ix) said co-crystal is a *cis*-itraconazoleHCl:DL-tartaric acid co-crystal and said X-ray diffraction pattern comprises a peak at 17.75 degrees; or
- (b) the co-crystal is characterized by a DSC thermogram, wherein said co-crystal is a *cis*-itraconazoleHCl:DL-tartaric acid co-crystal and said DSC thermogram comprises an endothermic transition at about 162 degrees C.

66. The co-crystal according to claim 11, wherein:

- (a) the co-crystal is characterized by a powder X-ray diffraction pattern comprising peaks expressed in terms of 2-theta angles, wherein:

- (i) said co-crystal is a modafinil:malonic acid form I co-crystal and said X-ray diffraction pattern comprises peaks at 5.11, 9.35, and 16.87 degrees;
  - (ii) said co-crystal is a modafinil:malonic acid form I co-crystal and said X-ray diffraction pattern comprises peaks at 16.87, 18.33, and 19.53 degrees;
  - (iii) said co-crystal is a modafinil:malonic acid form I co-crystal and said X-ray diffraction pattern comprises peaks at 9.35, 19.53, and 22.89 degrees;
  - (iv) said co-crystal is a modafinil:malonic acid form I co-crystal and said X-ray diffraction pattern comprises peaks at 5.11 and 9.35 degrees;
  - (v) said co-crystal is a modafinil:malonic acid form I co-crystal and said X-ray diffraction pattern comprises peaks at 16.87 and 19.53 degrees;
  - (vi) said co-crystal is a modafinil:malonic acid form I co-crystal and said X-ray diffraction pattern comprises peaks at 18.33 and 22.89 degrees;
  - (vii) said co-crystal is a modafinil:malonic acid form I co-crystal and said X-ray diffraction pattern comprises a peak at 5.11 degrees;
  - (viii) said co-crystal is a modafinil:malonic acid form I co-crystal and said X-ray diffraction pattern comprises a peak at 9.35 degrees; or
  - (ix) said co-crystal is a modafinil:malonic acid form I co-crystal and said X-ray diffraction pattern comprises a peak at 16.87 degrees;
- (b) the co-crystal is characterized by a DSC thermogram, wherein said co-crystal is a modafinil:malonic acid form I co-crystal and said DSC thermogram comprises an endothermic transition at about 106 degrees C; or
- (c) the co-crystal is characterized by a Raman spectrum comprising peaks expressed in terms of  $\text{cm}^{-1}$ , wherein:
- (i) said co-crystal is a modafinil:malonic acid form I co-crystal and said Raman spectrum comprises peaks at 1004, 633, and 265;



- (ii) said co-crystal is a modafinil:malonic acid form I co-crystal and said Raman spectrum comprises peaks at 1032, 1601, and 767;
- (iii) said co-crystal is a modafinil:malonic acid form I co-crystal and said Raman spectrum comprises peaks at 1004 and 633;
- (iv) said co-crystal is a modafinil:malonic acid form I co-crystal and said Raman spectrum comprises peaks at 1183 and 767; or
- (v) said co-crystal is a modafinil:malonic acid form I co-crystal and said Raman spectrum comprises peaks at 1601 and 718.

67. The co-crystal according to claim 11, wherein the co-crystal is characterized by a powder X-ray diffraction pattern comprising peaks expressed in terms of 2-theta angles, wherein:

- (a) said co-crystal is a modafinil:malonic acid form II co-crystal and said X-ray diffraction pattern comprises peaks at 5.90, 9.54, and 20.01 degrees;
- (b) said co-crystal is a modafinil:malonic acid form II co-crystal and said X-ray diffraction pattern comprises peaks at 15.79, 18.02, and 21.66 degrees;
- (c) said co-crystal is a modafinil:malonic acid form II co-crystal and said X-ray diffraction pattern comprises peaks at 9.54, 20.01, and 25.30 degrees;
- (d) said co-crystal is a modafinil:malonic acid form II co-crystal and said X-ray diffraction pattern comprises peaks at 5.90 and 9.54 degrees;
- (e) said co-crystal is a modafinil:malonic acid form II co-crystal and said X-ray diffraction pattern comprises peaks at 5.90 and 20.01 degrees;
- (f) said co-crystal is a modafinil:malonic acid form II co-crystal and said X-ray diffraction pattern comprises peaks at 9.54 and 20.01 degrees;

- (g) said co-crystal is a modafinil:malonic acid form II co-crystal and said X-ray diffraction pattern comprises peaks at 5.90 degrees; or
- (h) said co-crystal is a modafinil:malonic acid form II co-crystal and said X-ray diffraction pattern comprises peaks at 9.54 degrees.

68. The co-crystal according to claim 11, wherein the co-crystal is characterized by a powder X-ray diffraction pattern comprising peaks expressed in terms of 2-theta angles, wherein:

- (a) said co-crystal is a modafinil:glycolic acid co-crystal and said X-ray diffraction pattern comprises peaks at 9.51, 15.97, and 20.03 degrees;
- (b) said co-crystal is a modafinil:glycolic acid co-crystal and said X-ray diffraction pattern comprises peaks at 14.91, 19.01, and 22.75 degrees;
- (c) said co-crystal is a modafinil:glycolic acid co-crystal and said X-ray diffraction pattern comprises peaks at 15.97, 25.03, and 25.71 degrees;
- (d) said co-crystal is a modafinil:glycolic acid co-crystal and said X-ray diffraction pattern comprises peaks at 9.51 and 15.97 degrees;
- (e) said co-crystal is a modafinil:glycolic acid co-crystal and said X-ray diffraction pattern comprises peaks at 20.03 and 25.03 degrees;
- (f) said co-crystal is a modafinil:glycolic acid co-crystal and said X-ray diffraction pattern comprises peaks at 15.97 and 25.03 degrees;
- (g) said co-crystal is a modafinil:glycolic acid co-crystal and said X-ray diffraction pattern comprises a peak at 9.51 degrees;
- (h) said co-crystal is a modafinil:glycolic acid co-crystal and said X-ray diffraction pattern comprises a peak at 15.97 degrees; or
- (i) said co-crystal is a modafinil:glycolic acid co-crystal and said X-ray diffraction pattern comprises a peak at 20.03 degrees.

69. The co-crystal according to claim 11, wherein the co-crystal is characterized by a powder X-ray diffraction pattern comprising peaks expressed in terms of 2-theta angles, wherein:

- (a) said co-crystal is a modafinil: maleic acid co-crystal and said X-ray diffraction pattern comprises peaks at 4.69, 6.15, and 9.61 degrees;
- (b) said co-crystal is a modafinil: maleic acid co-crystal and said X-ray diffraction pattern comprises peaks at 10.23, 19.97, and 21.83 degrees;
- (c) said co-crystal is a modafinil: maleic acid co-crystal and said X-ray diffraction pattern comprises peaks at 4.69, 10.23, and 21.83 degrees;
- (d) said co-crystal is a modafinil: maleic acid co-crystal and said X-ray diffraction pattern comprises peaks at 4.69 and 19.97 degrees;
- (e) said co-crystal is a modafinil: maleic acid co-crystal and said X-ray diffraction pattern comprises peaks at 6.15 and 9.61 degrees;
- (f) said co-crystal is a modafinil: maleic acid co-crystal and said X-ray diffraction pattern comprises peaks at 4.69 and 6.15 degrees;
- (g) said co-crystal is a modafinil: maleic acid co-crystal and said X-ray diffraction pattern comprises a peak at 4.69 degrees;
- (h) said co-crystal is a modafinil: maleic acid co-crystal and said X-ray diffraction pattern comprises a peak at 9.61 degrees; or
- (i) said co-crystal is a modafinil: maleic acid co-crystal and said X-ray diffraction pattern comprises a peak at 19.97 degrees.

70. The co-crystal according to claim 11, wherein:

- (a) the co-crystal is characterized by a powder X-ray diffraction pattern comprising peaks expressed in terms of 2-theta angles, wherein:
  - (i) said co-crystal is a 5-fluorouracil: urea co-crystal and said X-ray diffraction pattern comprises peaks at 11.23, 13.27, and 16.93 degrees;
  - (ii) said co-crystal is a 5-fluorouracil: urea co-crystal and said X-ray diffraction pattern comprises peaks at 12.69, 20.37, and 25.55 degrees;
  - (iii) said co-crystal is a 5-fluorouracil: urea co-crystal and said X-ray diffraction pattern comprises peaks at 17.93, 23.65, and 26.87 degrees;

- (iv) said co-crystal is a 5-fluorouracil:urea co-crystal and said X-ray diffraction pattern comprises peaks at 11.23 and 16.93 degrees;
- (v) said co-crystal is a 5-fluorouracil:urea co-crystal and said X-ray diffraction pattern comprises peaks at 23.65 and 32.49 degrees;
- (vi) said co-crystal is a 5-fluorouracil:urea co-crystal and said X-ray diffraction pattern comprises peaks at 13.27 and 25.55 degrees;
- (vii) said co-crystal is a 5-fluorouracil:urea co-crystal and said X-ray diffraction pattern comprises a peak at 11.23 degrees;
- (viii) said co-crystal is a 5-fluorouracil:urea co-crystal and said X-ray diffraction pattern comprises a peak at 16.93 degrees; or
- (ix) said co-crystal is a 5-fluorouracil:urea co-crystal and said X-ray diffraction pattern comprises a peak at 25.55 degrees;
- (b) the co-crystal is characterized by a DSC thermogram, wherein said co-crystal is a 5-fluorouracil:urea co-crystal and said DSC thermogram comprises an endothermic transition at about 208 degrees C; or
- (c) the co-crystal is characterized by a Raman spectrum comprising peaks expressed in terms of  $\text{cm}^{-1}$ , wherein:
  - (i) said co-crystal is a 5-fluorouracil:urea co-crystal and said Raman spectrum comprises peaks at 1347, 1024, and 757;
  - (ii) said co-crystal is a 5-fluorouracil:urea co-crystal and said Raman spectrum comprises peaks at 644, 545, and 472;
  - (iii) said co-crystal is a 5-fluorouracil:urea co-crystal and said Raman spectrum comprises peaks at 1680 and 1347;
  - (iv) said co-crystal is a 5-fluorouracil:urea co-crystal and said Raman spectrum comprises peaks at 1347 and 757; or
  - (v) said co-crystal is a 5-fluorouracil:urea co-crystal and said Raman spectrum comprises peaks at 1024 and 757.

71. The co-crystal according to claim 11, wherein the co-crystal is characterized by a powder X-ray diffraction pattern comprising peaks expressed in terms of 2-theta angles, wherein:

- (a) said co-crystal is a hydrochlorothiazide:nicotinic acid co-crystal and said X-ray diffraction pattern comprises peaks at 8.57, 13.23, and 21.13 degrees;
- (b) said co-crystal is a hydrochlorothiazide:nicotinic acid co-crystal and said X-ray diffraction pattern comprises peaks at 14.31, 17.89, and 26.57 degrees;
- (c) said co-crystal is a hydrochlorothiazide:nicotinic acid co-crystal and said X-ray diffraction pattern comprises peaks at 8.57, 21.13, and 25.73 degrees;
- (d) said co-crystal is a hydrochlorothiazide:nicotinic acid co-crystal and said X-ray diffraction pattern comprises peaks at 8.57 and 21.13 degrees;
- (e) said co-crystal is a hydrochlorothiazide:nicotinic acid co-crystal and said X-ray diffraction pattern comprises peaks at 13.23 and 26.57 degrees;
- (f) said co-crystal is a hydrochlorothiazide:nicotinic acid co-crystal and said X-ray diffraction pattern comprises peaks at 17.89 and 24.41 degrees;
- (g) said co-crystal is a hydrochlorothiazide:nicotinic acid co-crystal and said X-ray diffraction pattern comprises a peak at 8.57 degrees;
- (h) said co-crystal is a hydrochlorothiazide:nicotinic acid co-crystal and said X-ray diffraction pattern comprises a peak at 13.23 degrees; or
- (i) said co-crystal is a hydrochlorothiazide:nicotinic acid co-crystal and said X-ray diffraction pattern comprises a peak at 21.13 degrees.

72. The co-crystal according to claim 11, wherein the co-crystal is characterized by a powder X-ray diffraction pattern comprising peaks expressed in terms of 2-theta angles, wherein:

- (a) said co-crystal is a hydrochlorothiazide:18-crown-6 co-crystal and said X-ray diffraction pattern comprises peaks at 9.97, 11.57, and 15.67 degrees;
- (b) said co-crystal is a hydrochlorothiazide:18-crown-6 co-crystal and said X-ray diffraction pattern comprises peaks at 14.53, 19.05, and 20.31 degrees;
- (c) said co-crystal is a hydrochlorothiazide:18-crown-6 co-crystal and said X-ray diffraction pattern comprises peaks at 16.61, 20.65, and 23.63 degrees;



- (d) said co-crystal is a hydrochlorothiazide:18-crown-6 co-crystal and said X-ray diffraction pattern comprises peaks at 9.97 and 10.43 degrees;
- (e) said co-crystal is a hydrochlorothiazide:18-crown-6 co-crystal and said X-ray diffraction pattern comprises peaks at 12.83 and 15.67 degrees;
- (f) said co-crystal is a hydrochlorothiazide:18-crown-6 co-crystal and said X-ray diffraction pattern comprises peaks at 14.53 and 20.31 degrees;
- (g) said co-crystal is a hydrochlorothiazide:18-crown-6 co-crystal and said X-ray diffraction pattern comprises a peak at 10.43 degrees;
- (h) said co-crystal is a hydrochlorothiazide:18-crown-6 co-crystal and said X-ray diffraction pattern comprises a peak at 12.83 degrees; or
- (i) said co-crystal is a hydrochlorothiazide:18-crown-6 co-crystal and said X-ray diffraction pattern comprises a peak at 20.31 degrees.

73. The co-crystal according to claim 11, wherein the co-crystal is characterized by a powder X-ray diffraction pattern comprising peaks expressed in terms of 2-theta angles, wherein:

- (a) said co-crystal is a hydrochlorothiazide:piperazine co-crystal and said X-ray diffraction pattern comprises peaks at 6.85, 13.75, and 18.71 degrees;
- (b) said co-crystal is a hydrochlorothiazide:piperazine co-crystal and said X-ray diffraction pattern comprises peaks at 15.93, 23.27, and 24.17 degrees;
- (c) said co-crystal is a hydrochlorothiazide:piperazine co-crystal and said X-ray diffraction pattern comprises peaks at 18.17, 20.93, and 27.75 degrees;
- (d) said co-crystal is a hydrochlorothiazide:piperazine co-crystal and said X-ray diffraction pattern comprises peaks at 6.85 and 18.71 degrees;
- (e) said co-crystal is a hydrochlorothiazide:piperazine co-crystal and said X-ray diffraction pattern comprises peaks at 13.75 and 23.27 degrees;
- (f) said co-crystal is a hydrochlorothiazide:piperazine co-crystal and said X-ray diffraction pattern comprises peaks at 15.93 and 24.17 degrees;
- (g) said co-crystal is a hydrochlorothiazide:piperazine co-crystal and said X-ray diffraction pattern comprises a peak at 6.85 degrees;



- (h) said co-crystal is a hydrochlorothiazide:piperazine co-crystal and said X-ray diffraction pattern comprises a peak at 13.75 degrees; or
- (i) said co-crystal is a hydrochlorothiazide:piperazine co-crystal and said X-ray diffraction pattern comprises a peak at 18.71 degrees.

74. The co-crystal according to claim 11, wherein the co-crystal is characterized by a DSC thermogram, wherein said co-crystal is an acetaminophen:4,4-bipyridine:water co-crystal and said DSC thermogram comprises an endothermic transition at about 58 degrees C.

75. The co-crystal according to claim 11, wherein:

- (a) the co-crystal is characterized by a powder X-ray diffraction pattern comprising peaks expressed in terms of 2-theta angles, wherein:
  - (i) said co-crystal is a phenytoin:pyridone co-crystal and said X-ray diffraction pattern comprises peaks at 5.2, 15.1, and 16.7 degrees;
  - (ii) said co-crystal is a phenytoin:pyridone co-crystal and said X-ray diffraction pattern comprises peaks at 11.1, 16.2, and 17.8 degrees;
  - (iii) said co-crystal is a phenytoin:pyridone co-crystal and said X-ray diffraction pattern comprises peaks at 5.2 and 15.1 degrees;
  - (iv) said co-crystal is a phenytoin:pyridone co-crystal and said X-ray diffraction pattern comprises peaks at 15.1 and 19.4 degrees;
  - (v) said co-crystal is a phenytoin:pyridone co-crystal and said X-ray diffraction pattern comprises a peak at 5.2 degrees; or
  - (vi) said co-crystal is a phenytoin:pyridone co-crystal and said X-ray diffraction pattern comprises a peak at 15.1 degrees; or
- (b) the co-crystal is characterized by a DSC thermogram, wherein said co-crystal is a phenytoin:pyridone co-crystal and said DSC thermogram comprises an endothermic transition at about 233 degrees C.

76. The co-crystal according to claim 11, wherein the co-crystal is characterized by a DSC thermogram, wherein said co-crystal is an aspirin:4,4-bipyridine co-crystal and said DSC thermogram comprises an endothermic transition at about 95 degrees C.

77. The co-crystal according to claim 11, wherein:

- (a) the co-crystal is characterized by a powder X-ray diffraction pattern comprising peaks expressed in terms of 2-theta angles, wherein:
  - (i) said co-crystal is an ibuprofen:4,4-bipyridine co-crystal and said X-ray diffraction pattern comprises peaks at 3.4 and 6.9 degrees;
  - (ii) said co-crystal is an ibuprofen:4,4-bipyridine co-crystal and said X-ray diffraction pattern comprises peaks at 3.4 and 10.4 degrees;
  - (iii) said co-crystal is an ibuprofen:4,4-bipyridine co-crystal and said X-ray diffraction pattern comprises peaks at 10.4 and 17.3 degrees;
  - (iv) said co-crystal is an ibuprofen:4,4-bipyridine co-crystal and said X-ray diffraction pattern comprises a peak at 3.4 degrees; or
  - (v) said co-crystal is an ibuprofen:4,4-bipyridine co-crystal and said X-ray diffraction pattern comprises a peak at 10.4 degrees; or
- (b) the co-crystal is characterized by a DSC thermogram, wherein said co-crystal is an ibuprofen:4,4-bipyridine co-crystal and said DSC thermogram comprises an endothermic transition at about 119 degrees C.

78. The co-crystal according to claim 11, wherein:

- (a) the co-crystal is characterized by a powder X-ray diffraction pattern comprising peaks expressed in terms of 2-theta angles, wherein:
  - (i) said co-crystal is a flurbiprofen:4,4-bipyridine co-crystal and said X-ray diffraction pattern comprises peaks at 16.8, 18.1, and 20.0 degrees;
  - (ii) said co-crystal is a flurbiprofen:4,4-bipyridine co-crystal and said X-ray diffraction pattern comprises peaks at 18.1, 21.3, and 25.0 degrees;

- (iii) said co-crystal is a flurbiprofen:4,4-bipyridine co-crystal and said X-ray diffraction pattern comprises peaks at 16.8 and 19.0 degrees;
- (iv) said co-crystal is a flurbiprofen:4,4-bipyridine co-crystal and said X-ray diffraction pattern comprises peaks at 17.1 and 21.3 degrees;
- (v) said co-crystal is a flurbiprofen:4,4-bipyridine co-crystal and said X-ray diffraction pattern comprises a peak at 16.8 degrees; or
- (vi) said co-crystal is a flurbiprofen:4,4-bipyridine co-crystal and said X-ray diffraction pattern comprises a peak at 19.0 degrees; or
- (b) the co-crystal is characterized by a DSC thermogram, wherein said co-crystal is a flurbiprofen:4,4-bipyridine co-crystal and said DSC thermogram comprises an endothermic transition at about 163 degrees C.

79. The co-crystal according to claim 11, wherein:

- (a) the co-crystal is characterized by a powder X-ray diffraction pattern comprising peaks expressed in terms of 2-theta angles, wherein:
  - (i) said co-crystal is a flurbiprofen:trans-1,2-bis-(4-pyridyl) ethylene co-crystal and said X-ray diffraction pattern comprises peaks at 3.6, 17.3, and 18.4 degrees;
  - (ii) said co-crystal is a flurbiprofen:trans-1,2-bis-(4-pyridyl) ethylene co-crystal and said X-ray diffraction pattern comprises peaks at 17.3, 19.1, and 23.8 degrees;
  - (iii) said co-crystal is a flurbiprofen:trans-1,2-bis-(4-pyridyl) ethylene co-crystal and said X-ray diffraction pattern comprises peaks at 18.1 and 22.3 degrees;
  - (iv) said co-crystal is a flurbiprofen:trans-1,2-bis-(4-pyridyl) ethylene co-crystal and said X-ray diffraction pattern comprises peaks at 3.6 and 18.4 degrees;
  - (v) said co-crystal is a flurbiprofen:trans-1,2-bis-(4-pyridyl) ethylene co-crystal and said X-ray diffraction pattern comprises a peak at 3.6 degrees; or

- (vi) said co-crystal is a flurbiprofen:trans-1,2-bis-(4-pyridyl) ethylene co-crystal and said X-ray diffraction pattern comprises a peak at 19.1 degrees; or
- (b) the co-crystal is characterized by a DSC thermogram, wherein said co-crystal is a flurbiprofen:trans-1,2-bis-(4-pyridyl) ethylene co-crystal and said DSC thermogram comprises an endothermic transition at about 164 degrees C.

80. The co-crystal according to claim 11, wherein:

- (a) the co-crystal is characterized by a powder X-ray diffraction pattern comprising peaks expressed in terms of 2-theta angles, wherein:
  - (i) said co-crystal is a carbamazepine:p-phthalaldehyde co-crystal and said X-ray diffraction pattern comprises peaks at 8.5, 11.9, and 15.1 degrees;
  - (ii) said co-crystal is a carbamazepine:p-phthalaldehyde co-crystal and said X-ray diffraction pattern comprises peaks at 10.6, 14.4, and 18.0 degrees;
  - (iii) said co-crystal is a carbamazepine:p-phthalaldehyde co-crystal and said X-ray diffraction pattern comprises peaks at 11.9 and 23.7 degrees;
  - (iv) said co-crystal is a carbamazepine:p-phthalaldehyde co-crystal and said X-ray diffraction pattern comprises peaks at 8.5 and 14.4 degrees;
  - (v) said co-crystal is a carbamazepine:p-phthalaldehyde co-crystal and said X-ray diffraction pattern comprises a peak at 8.5 degrees; or
  - (vi) said co-crystal is a carbamazepine:p-phthalaldehyde co-crystal and said X-ray diffraction pattern comprises a peak at 11.9 degrees; or
- (b) the co-crystal is characterized by a DSC thermogram, wherein said co-crystal is a carbamazepine:p-phthalaldehyde co-crystal and said DSC thermogram comprises an endothermic transition at about 128 degrees C.

81. The co-crystal according to claim 11, wherein:
- (a) the co-crystal is characterized by a powder X-ray diffraction pattern comprising peaks expressed in terms of 2-theta angles, wherein:
    - (i) said co-crystal is a carbamazepine:nicotinamide co-crystal and said X-ray diffraction pattern comprises peaks at 8.8, 13.2, and 15.6 degrees;
    - (ii) said co-crystal is a carbamazepine:nicotinamide co-crystal and said X-ray diffraction pattern comprises peaks at 13.2, 15.6, and 20.4 degrees;
    - (iii) said co-crystal is a carbamazepine:nicotinamide co-crystal and said X-ray diffraction pattern comprises peaks at 8.8 and 26.4 degrees;
    - (iv) said co-crystal is a carbamazepine:nicotinamide co-crystal and said X-ray diffraction pattern comprises peaks at 13.2 and 15.6 degrees;
    - (v) said co-crystal is a carbamazepine:nicotinamide co-crystal and said X-ray diffraction pattern comprises a peak at 8.8 degrees; or
    - (vi) said co-crystal is a carbamazepine:nicotinamide co-crystal and said X-ray diffraction pattern comprises a peak at 15.6 degrees; or
  - (b) the co-crystal is characterized by a DSC thermogram, wherein said co-crystal is a carbamazepine:nicotinamide co-crystal and said DSC thermogram comprises an endothermic transition at about 157 degrees C.
82. The co-crystal according to claim 11, wherein:
- (a) the co-crystal is characterized by a powder X-ray diffraction pattern comprising peaks expressed in terms of 2-theta angles, wherein:
    - (i) said co-crystal is a carbamazepine:saccharin co-crystal and said X-ray diffraction pattern comprises peaks at 6.9, 13.6, and 15.3 degrees;
    - (ii) said co-crystal is a carbamazepine:saccharin co-crystal and said X-ray diffraction pattern comprises peaks at 14.0, 20.2, and 28.3 degrees;

- (iii) said co-crystal is a carbamazepine:saccharin co-crystal and said X-ray diffraction pattern comprises peaks at 12.2 and 21.3 degrees;
- (iv) said co-crystal is a carbamazepine:saccharin co-crystal and said X-ray diffraction pattern comprises peaks at 14.0 and 20.2 degrees;
- (v) said co-crystal is a carbamazepine:saccharin co-crystal and said X-ray diffraction pattern comprises a peak at 14.0 degrees; or
- (vi) said co-crystal is a carbamazepine:saccharin co-crystal and said X-ray diffraction pattern comprises a peak at 21.3 degrees; or
- (b) the co-crystal is characterized by a DSC thermogram, wherein said co-crystal is a carbamazepine:saccharin co-crystal and said DSC thermogram comprises an endothermic transition at about 177 degrees C.

83. The co-crystal according to claim 11, wherein:

- (a) the co-crystal is characterized by a powder X-ray diffraction pattern comprising peaks expressed in terms of 2-theta angles, wherein:
  - (i) said co-crystal is a carbamazepine:5-nitroisophthalic acid co-crystal and said X-ray diffraction pattern comprises peaks at 10.14 and 17.44 degrees;
  - (ii) said co-crystal is a carbamazepine:5-nitroisophthalic acid co-crystal and said X-ray diffraction pattern comprises peaks at 15.29 and 21.17 degrees;
  - (iii) said co-crystal is a carbamazepine:5-nitroisophthalic acid co-crystal and said X-ray diffraction pattern comprises peaks at 10.14 and 15.29 degrees;
  - (iv) said co-crystal is a carbamazepine:5-nitroisophthalic acid co-crystal and said X-ray diffraction pattern comprises peaks at 21.17 and 31.41 degrees;
  - (v) said co-crystal is a carbamazepine:5-nitroisophthalic acid co-crystal and said X-ray diffraction pattern comprises a peak at 10.14 degrees; or



- (vi) said co-crystal is a carbamazepine:5-nitroisophthalic acid co-crystal and said X-ray diffraction pattern comprises a peak at 17.44 degrees; or
- (b) the co-crystal is characterized by a DSC thermogram, wherein said co-crystal is a carbamazepine:5-nitroisophthalic acid co-crystal and said DSC thermogram comprises an endothermic transition at about 191 degrees C.

84. The co-crystal according to claim 11, wherein:

- (a) the co-crystal is characterized by a powder X-ray diffraction pattern comprising peaks expressed in terms of 2-theta angles, wherein:
  - (i) said co-crystal is a carbamazepine:trimesic acid co-crystal and said X-ray diffraction pattern comprises peaks at 10.89, 12.23, and 16.25 degrees;
  - (ii) said co-crystal is a carbamazepine:trimesic acid co-crystal and said X-ray diffraction pattern comprises peaks at 10.89, 17.05, and 18.47 degrees;
  - (iii) said co-crystal is a carbamazepine:trimesic acid co-crystal and said X-ray diffraction pattern comprises peaks at 12.23 and 17.05 degrees;
  - (iv) said co-crystal is a carbamazepine:trimesic acid co-crystal and said X-ray diffraction pattern comprises peaks at 10.89 and 21.95 degrees;
  - (v) said co-crystal is a carbamazepine:trimesic acid co-crystal and said X-ray diffraction pattern comprises a peak at 10.89 degrees; or
  - (vi) said co-crystal is a carbamazepine:trimesic acid co-crystal and said X-ray diffraction pattern comprises a peak at 16.25 degrees; or
- (b) the co-crystal is characterized by a DSC thermogram, wherein said co-crystal is a carbamazepine:trimesic acid co-crystal and said DSC thermogram comprises an endothermic transition at about 273 degrees C.

85. The co-crystal of claim 1, specifically excluding a co-crystal selected from the group consisting of: nabumetone:2,3-naphthalenediol, fluoxetine HCl:benzoic acid, fluoxetine HCl:succinic acid, acetaminophen:piperazine, acetaminophen:theophylline, theophylline:salicylic acid, theophylline:p-hydroxybenzoic acid, theophylline:sorbic acid, theophylline:1-hydroxy-2-naphthoic acid, theophylline:glycolic acid, theophylline:2,5-dihydroxybenzoic acid, theophylline:chloroacetic acid, bis(diphenylhydantoin):9-ethyladenine acetylacetone solvate, bis(diphenylhydantoin):9-ethyladenine 2,4-pentanedione solvate, 5,5-diphenylbarbituric acid:9-ethyladenine, bis(diphenylhydantoin):9-ethyladenine, 4-aminobenzoic acid:4-aminobenzonitrile, sulfadimidine:salicylic acid, 8-hydroxyquinolinium 4-nitrobenzoate:4-nitrobenzoic acid, sulfaproxyline:caffeine, retro-inverso-isopropyl (2R,3S)-4-cyclohexyl-2-hydroxy-3-(N-((2R)-2-morpholinocarbonylmethyl-3-(1-naphthyl)propionyl)-L-histidylamino)butyrate:cinnamic acid monohydrate, benzoic acid:isonicotinamide, 3-(2-N',N'-(dimethylhydrazino)-4-thiazolylmethylthio)-N''-sulfamoylpropionamidine:maleic acid, diglycine hydrochloride ( $C_2H_5NO_2:C_2H_6NO_2^+Cl^-$ ), octadecanoic acid:3-pyridinecarboxamide, cis-N-(3-methyl-1-(2-(1,2,3,4-tetrahydro)naphthyl)-piperidin-4-yl)-N-phenylpropanamide hydrochloride:oxalic acid, trans-N-(3-methyl-1-(2-(1,2,3,4-tetrahydro)naphthyl)-piperidin-4-yl)-N-phenylpropanamide oxalate:oxalic acid dihydrate, bis(1-(3-((4-(2-isopropoxyphenyl)-1-piperazinyl)methyl)benzoyl)piperidine)succinate:succinic acid, bis(p-cyanophenyl)imidazolylmethane:succinic acid, cis-1-((4-(1-imidazolylmethyl)cyclohexyl)methyl)imidazole:succinic acid, (+)-2-(5,6-dimethoxy-1,2,3,4-tetrahydro-1-naphthyl)imidazoline:(+)-dibenzoyl-D-tartaric acid, raclopride:tartaric acid, 2,6-diamino-9-ethylpurine:5,5-diethylbarbituric acid, 5,5-diethylbarbituric acid:bis(2-aminopyridine), 5,5-diethylbarbituric acid:acetamide, 5,5-diethylbarbituric acid:KI<sub>3</sub>, 5,5-diethylbarbituric acid:urea, bis(barbital):hexamethylphosphoramide, 5,5-diethylbarbituric acid:imidazole, barbital:1-methylimidazole, 5,5-diethylbarbituric acid:N-methyl-2-pyridone, 2,4-diamino-5-(3,4,5-trimethoxybenzyl)-pyrimidine:5,5-diethylbarbituric acid, bis(barbital):caffeine, bis(barbital):1-methylimidazole, bis(beta-cyclodextrin):bis(barbital) hydrate, tetrakis(beta-cyclodextrin):tetrakis(barbital), 9-ethyladenine:5,5-diethylbarbituric acid,

barbital: $N'$ -(*p*-cyanophenyl)-*N*-(*p*-iodophenyl)melamine, barbital:2-amino-4-(*m*-bromophenylamino)-6-chloro-1,3,5-triazine, 5,5-diethylbarbituric acid: $N,N'$ -diphenylmelamine, 5,5-diethylbarbituric acid: $N,N'$ -bis(*p*-chlorophenyl)melamine,  $N,N'$ -bis(*p*-bromophenyl)melamine:5,5-diethylbarbituric acid, 5,5-diethylbarbituric acid: $N,N'$ -bis(*p*-iodophenyl)melamine, 5,5-diethylbarbituric acid: $N,N'$ -bis(*p*-tolyl)melamine, 5,5-diethylbarbituric acid: $N,N'$ -bis(*m*-tolyl)melamine, 5,5-diethylbarbituric acid: $N,N'$ -bis(*m*-chlorophenyl)melamine,  $N,N'$ -Bis(*m*-methylphenyl)melamine:barbital,  $N,N'$ -bis(*m*-chlorophenyl)melamine:barbital tetrahydrofuran solvate, 5,5-diethylbarbituric acid: $N,N'$ -bis(*tert*-butyl)melamine, 5,5-diethylbarbituric acid: $N,N'$ -di(*tert*-butyl)melamine, 6,6'-diquinolyl ether:5,5-diethylbarbituric acid, 5-*tert*-butyl-2,4,6-triaminopyrimidine:diethylbarbituric acid,  $N,N'$ -bis(4-carboxymethylphenyl)melamine:barbital ethanol solvate,  $N,N'$ -bis(4-*tert*-butylphenyl)melamine:barbital, tris(5,17- $N,N'$ -bis(4-amino-6-(butylamino)-1,3,5-triazin-2-yl)diamino-11,23-dinitro-25,26,27,28-tetrapropoxycalix(4)arene):hexakis(diethylbarbituric acid) toluene solvate,  $N,N'$ -bis(*m*-fluorophenyl)melamine:barbital,  $N,N'$ -bis(*m*-bromophenyl)melamine:barbital acetone solvate,  $N,N'$ -bis(*m*-iodophenyl)melamine:barbital acetonitrile solvate,  $N,N'$ -bis(*m*-trifluoromethylphenyl)melamine:barbital acetonitrile solvate, aminopyrine:barbital,  $N,N'$ -bis(4-fluorophenyl)melamine:barbital,  $N,N'$ -bis(4-trifluoromethylphenyl)melamine:barbital, 2,4-diamino-5-(3,4,5-trimethoxybenzyl)pyrimidine:barbital, hydroxybutyrate:hydroxyvalerate, 2-aminopyrimidine:succinic acid, 1,3-bis(((6-methylpyrid-2-yl)amino)carbonyl)benzene:glutaric acid, 5-*tert*-butyl-2,4,6-triaminopyrimidine:diethylbarbituric acid, bis(dithiobiuret-*S,S'*)nickel(II):diuracil, platinum 3,3'-dihydroxymethyl-2,2'-bipyridine dichloride: $AgF_3CSO_3$ , 4,4'-bipyridyl:isophthalic acid, 4,4'-bipyridyl:1,4-naphthalenedicarboxylic acid, 4,4'-bipyridyl:1,3,5-cyclohexane-tricarboxylic acid, 4,4'-bipyridyl:tricarballic acid, urotropin:azelaic acid, insulin:C8-HI (octanoyl- $N^e$ -LysB29-human insulin), isonicotinamide:cinnamic acid, isonicotinamide:3-hydroxybenzoic acid, isonicotinamide:3-*N,N*-dimethylaminobenzoic acid, isonicotinamide:3,5-bis(trifluoromethyl)-benzoic acid, isonicotinamide:*d,l*-mandelic acid,

isonicotinamide:chloroacetic acid, isonicotinamide:fumaric acid monoethyl ester, isonicotinamide:12-bromododecanoic acid, isonicotinamide:fumaric acid, isonicotinamide:succinic acid, isonicotinamide:4-ketopimelic acid, isonicotinamide:thiodiglycolic acid, 1,3,5-cyclohexane-tricarboxylic acid:hexamethyltetramine, 1,3,5-cyclohexane-tricarboxylic acid:4,7-phenanthroline, 4,7-phenanthroline:oxalic acid, 4,7-phenanthroline:terephthalic acid, 4,7-phenanthroline:1,3,5-cyclohexane-tricarboxylic acid, 4,7-phenanthroline:1,4-naphthalenedicarboxylic acid, pyrazine:methanoic acid, pyrazine:ethanoic acid, pyrazine:propanoic acid, pyrazine:butanoic acid, pyrazine:pentanoic acid, pyrazine:hexanoic acid, pyrazine:heptanoic acid, pyrazine:octanoic acid, pyrazine:nonanoic acid, pyrazine:decanoic acid, diammine-(deoxy-quanyl-quanyl-N<sup>7</sup>,N<sup>7</sup>)-platinum:tris(glycine) hydrate, 2-aminopyrimidine:p-phenylenediacetic acid, bis(2-aminopyrimidin-1-ium)fumarate:fumaric acid, 2-aminopyrimidine:indole-3-acetic acid, 2-aminopyrimidine:N-methylpyrrole-2-carboxylic acid, 2-aminopyrimidine:thiophen-2-carboxylic acid, 2-aminopyrimidine:(+)-camphoric acid, 2,4,6-Trinitrobenzoic acid:2-aminopyrimidine, 2-aminopyrimidine:4-aminobenzoic acid, 2-aminopyrimidine:bis(phenoxyacetic acid), 2-aminopyrimidine:(2,4-dichlorophenoxy)acetic acid, 2-aminopyrimidine:(3,4-dichlorophenoxy)acetic acid, 2-aminopyrimidine:indole-2-carboxylic acid, 2-aminopyrimidine:terephthalic acid, 2-aminopyrimidine:bis(2-nitrobenzoic acid), 2-aminopyrimidine:bis(2-aminobenzoic acid), 2-aminopyrimidine:3-aminobenzoic acid, 2-hexeneoic acid:isonicotinamide, 4-nitrobenzoic acid:isonicotinamide, 3,5-dinitrobenzoic acid:isonicotinamide:4-methylbenzoic acid, 2-amino-5-nitropyrimidine:2-amino-3-nitropyridine, 3,5-dinitrobenzoic acid:4-chlorobenzamide, 3-dimethylaminobenzoic acid:4-chlorobenzamide, fumaric acid:4-chlorobenzamide, oxine:4-nitrobenzoic acid, oxine:3,5-dinitrobenzoic acid, oxine:3,5-dinitrosalicylic acid, 3-[2-(N',N'-dimethylhydrazino)-4-thiazolylmethylthio]-N<sup>2</sup>-sulfamoylpropionamide:maleic acid, 5-fluorouracil:9-ethylhypoxanthine, 5-fluorouracil:cytosine dihydrate, 5-fluorouracil:theophylline monohydrate, stearic acid:nicotinamide, cis-1-{[4-(1-imidazolylmethyl)cyclohexyl]methyl}imidazole:succinic acid, CGS18320B:succinic acid, sulfaproxyline:caffeine, 4-aminobenzoic acid:4-aminobenzonitrile, 3,5-

dinitrobenzoic acid:isonicotinamide:3-methylbenzoic acid, 3,5-dinitrobenzoic  
 acid:isonicotinamide:4-(dimethylamino)benzoic acid, 3,5-dinitrobenzoic  
 acid:isonicotinamide:4-hydroxy-3-methoxycinnamic acid, isonicotinamide:oxalic acid,  
 isonicotinamide:malonic acid, isonicotinamide:succinic acid, isonicotinamide:glutaric  
 acid, isonicotinamide:adipic acid, benzoic acid:isonicotinamide, mazapertine:succinate,  
 betaine:dichloronitrophenol, betainepyridine:dichloronitrophenol,  
 betainepyridine:pentachlorophenol, 4-{2-[1-(2-hydroxyethyl)-4-pyridylidene]-  
 ethylidene}-cyclo-hexa-2,5-dien-1-one:methyl 2,4-dihydroxybenzoate, 4-{2-[1-(2-  
 hydroxyethyl)-4-pyridylidene]-ethylidene}-cyclo-hexa-2,5-dien-1-one:2,4-  
 dihydroxypropiophenone, 4-{2-[1-(2-hydroxyethyl)-4-pyridylidene]-ethylidene}-cyclo-  
 hexa-2,5-dien-1-one:2,4-dihydroxyacetophenone, squaric acid:4,4'-dipyridylacetylene,  
 squaric acid:1,2-bis(4-pyridyl)ethylene, chloranilic acid:1,4-bis[(4-  
 pyridyl)ethynyl]benzene, 4,4'-bipyridine:phthalic acid, 4,4'-dipyridylacetylene:phthalic  
 acid, bis(pentamethylcyclopentadienyl)iron:bromanilic acid,  
 bis(pentamethylcyclopentadienyl)iron:chloranilic acid,  
 bis(pentamethylcyclopentadienyl)iron:cyananilic acid,  
 pyrazinotetrathiafulvalene:chloranilic acid, phenol:pentafluorophenol, co-crystals of  
 itraconazole, and co-crystals of topiramate.



**Abstract**

A pharmaceutical composition comprising a co-crystal of an API and a co-crystal former; wherein the API has at least one functional group selected from ether, thioether, alcohol, thiol, aldehyde, ketone, thioketone, nitrate ester, phosphate ester, thiophosphate ester, ester, thioester, sulfate ester, carboxylic acid, phosphonic acid, phosphinic acid, sulfonic acid, amide, primary amine, secondary amine, ammonia, tertiary amine, imine, thiocyanate, cyanamide, oxime, nitrile diazo, organohalide, nitro, S-heterocyclic ring, thiophene, N-heterocyclic ring, pyrrole, O-heterocyclic ring, furan, epoxide, peroxide, hydroxamic acid, imidazole, pyridine and the co-crystal former has at least one functional group selected from amine, amide, pyridine, imidazole, indole, pyrrolidine, carbonyl, carboxyl, hydroxyl, phenol, sulfone, sulfonyl, mercapto and methyl thio, such that the API and co-crystal former are capable of co-crystallizing from a solution phase under crystallization conditions.



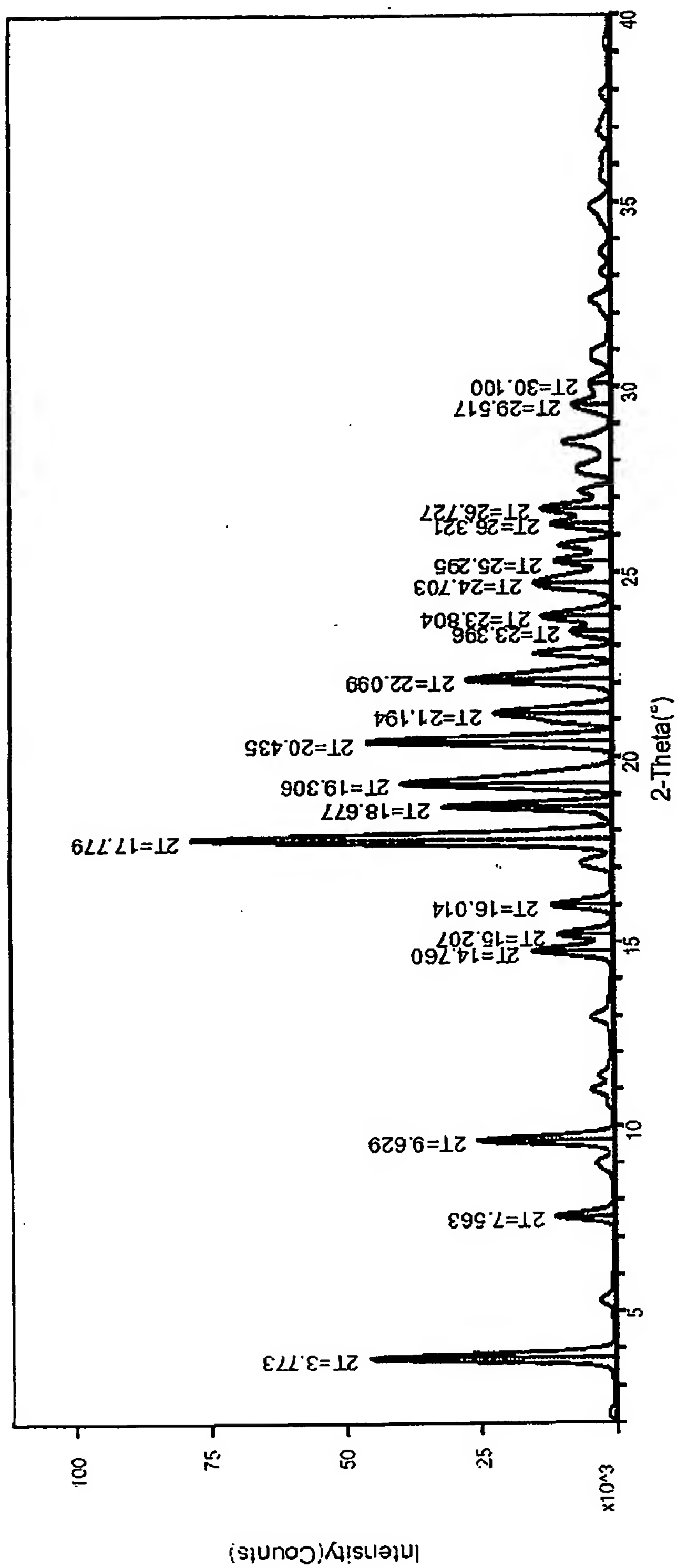


FIG. 1A

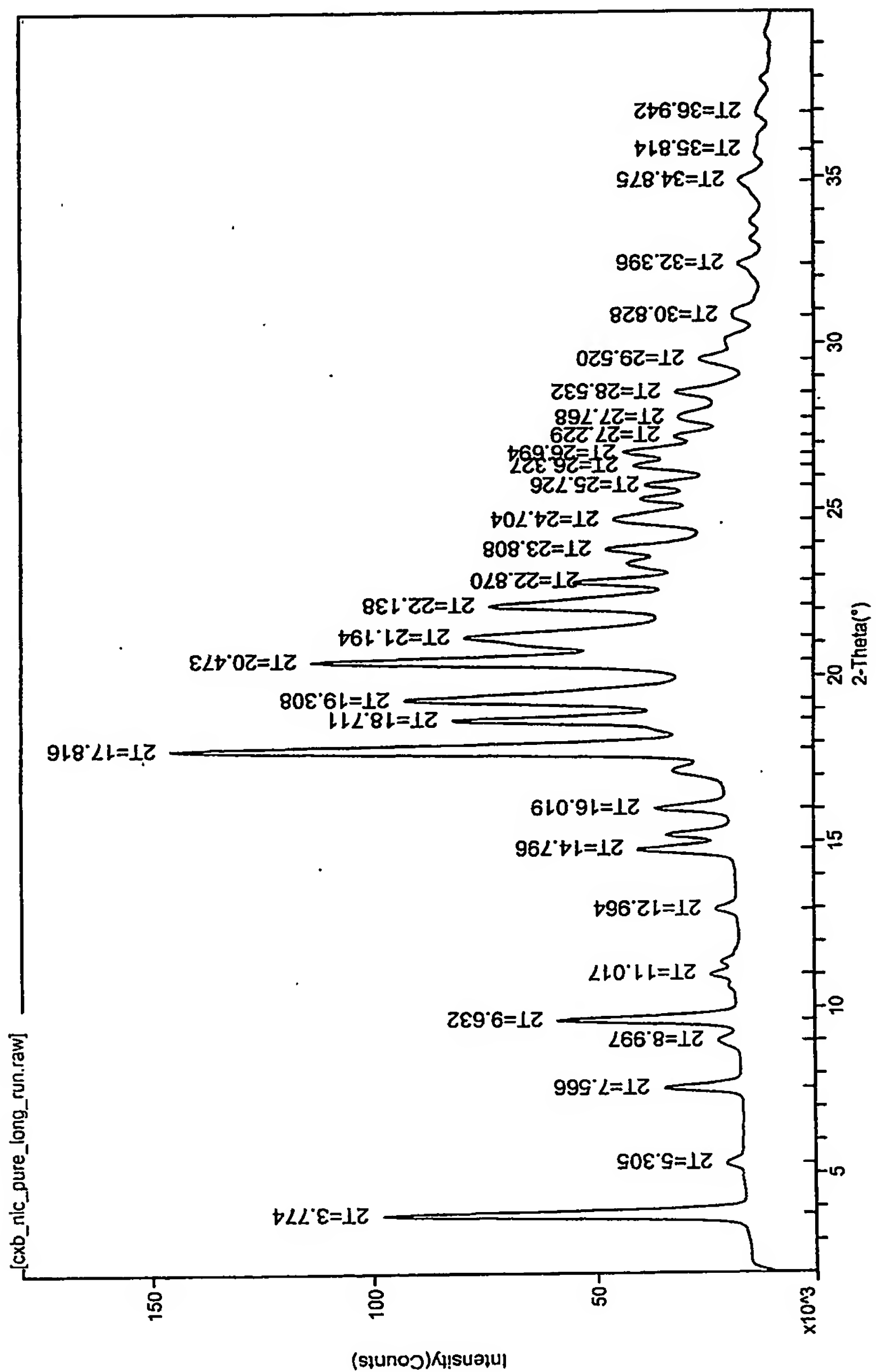


FIG. 1B

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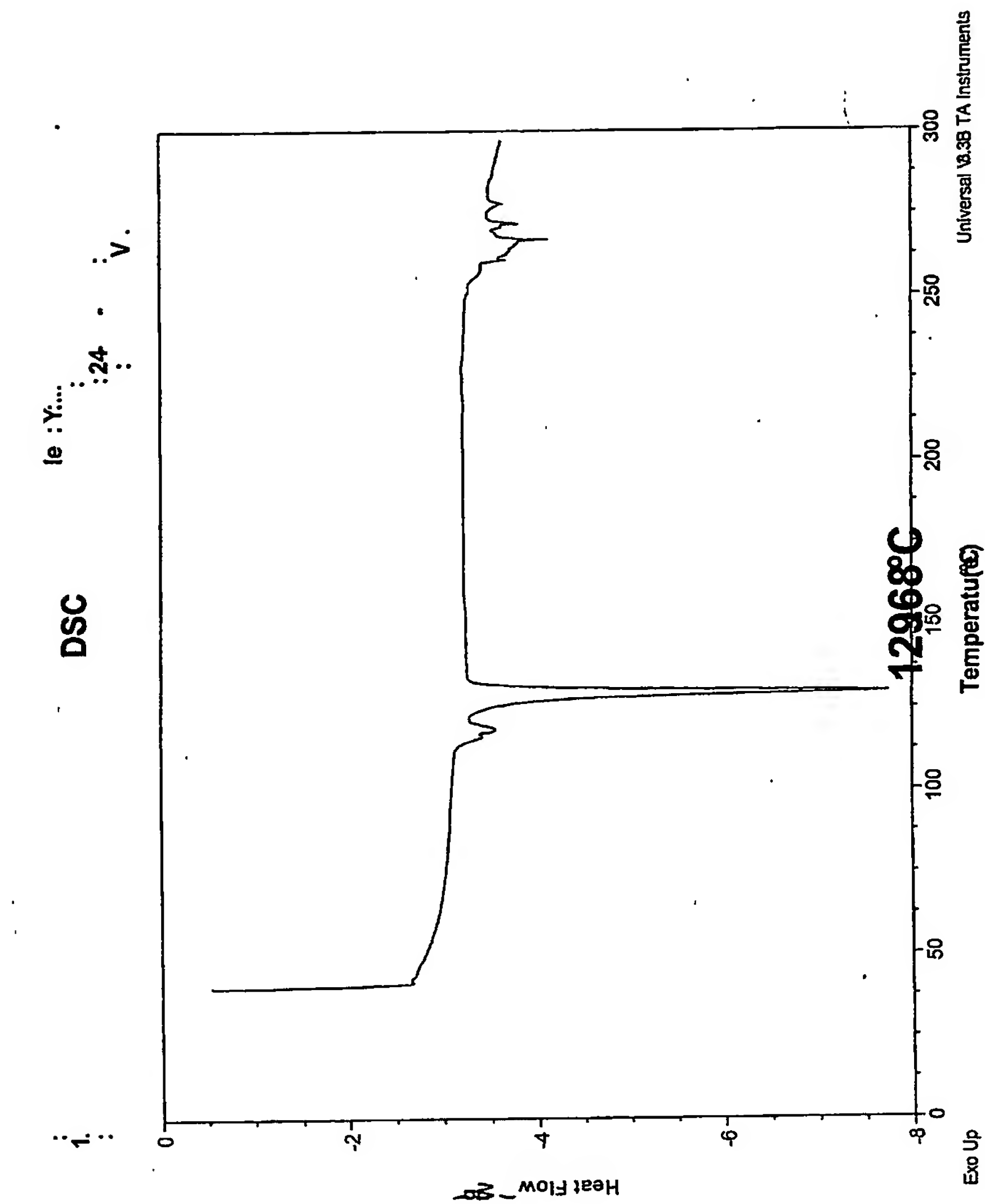


FIG. 2

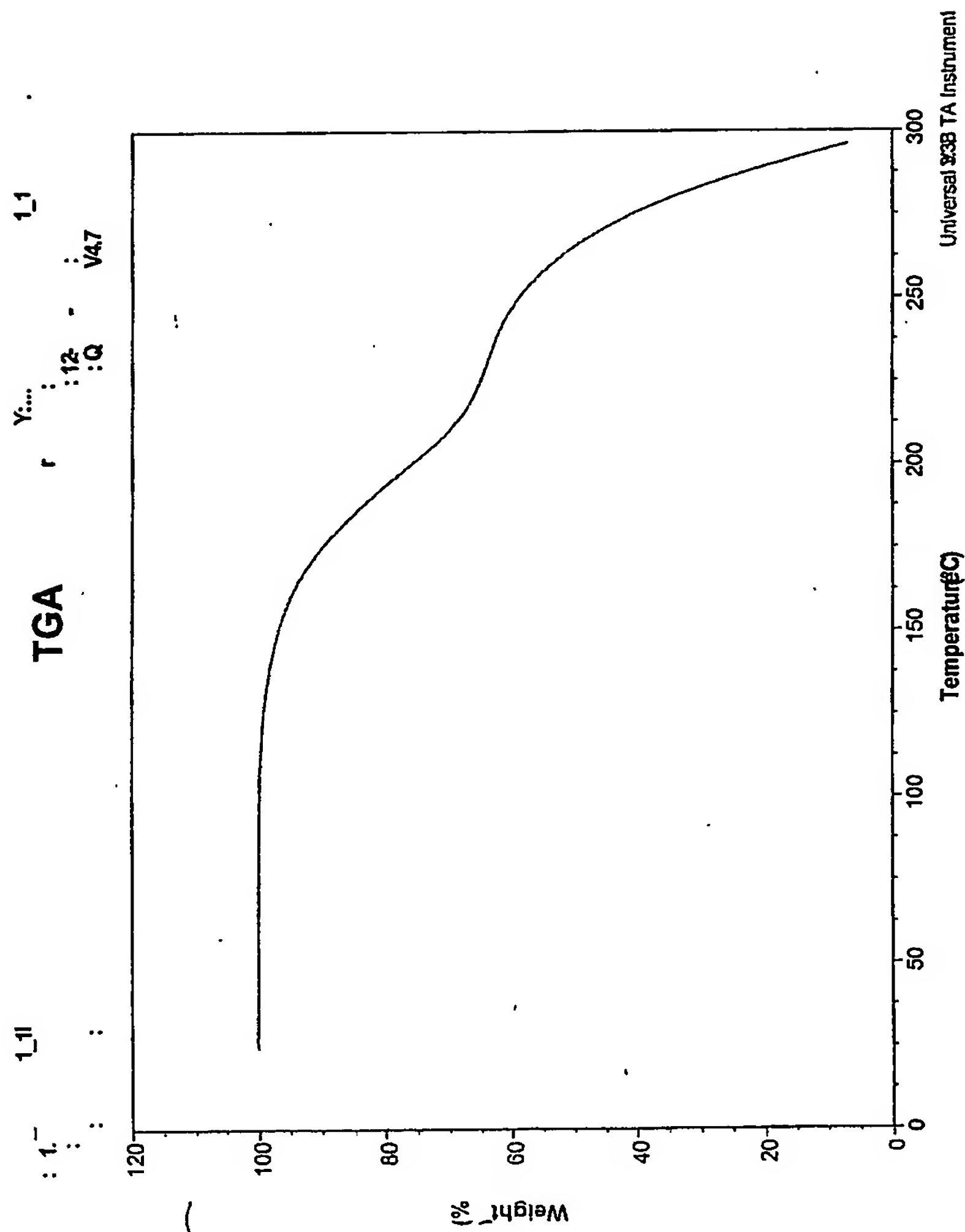


FIG. 3

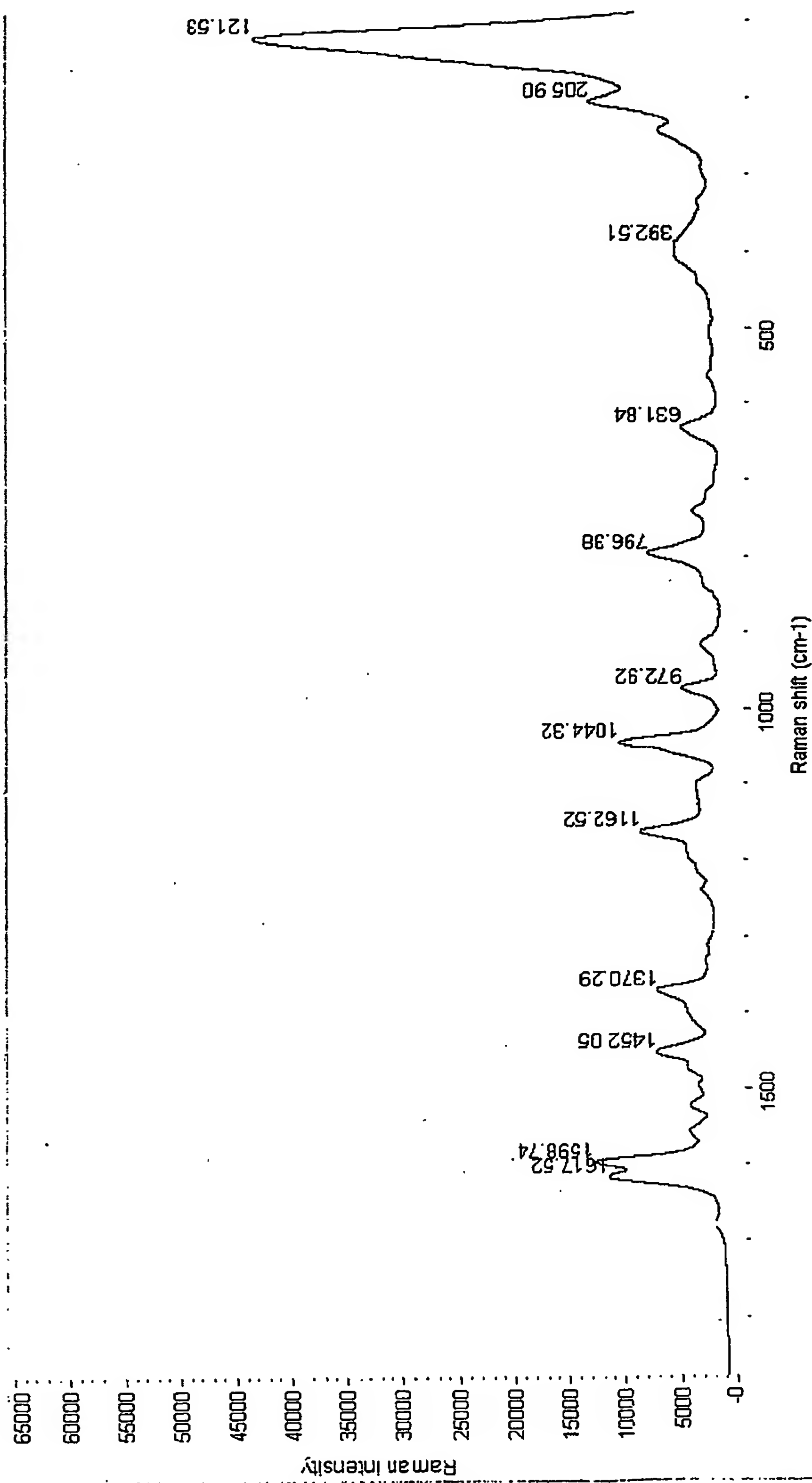


FIG. 4

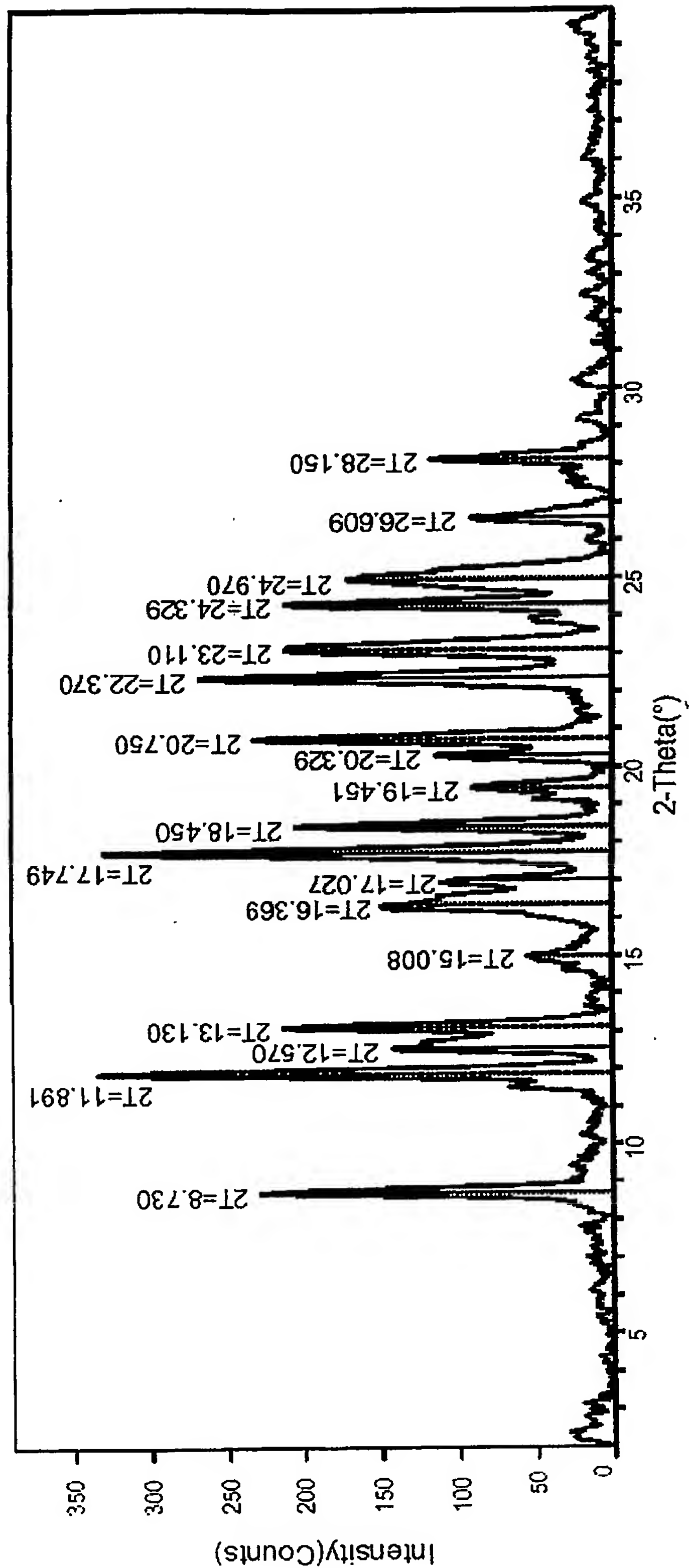


FIG. 5A



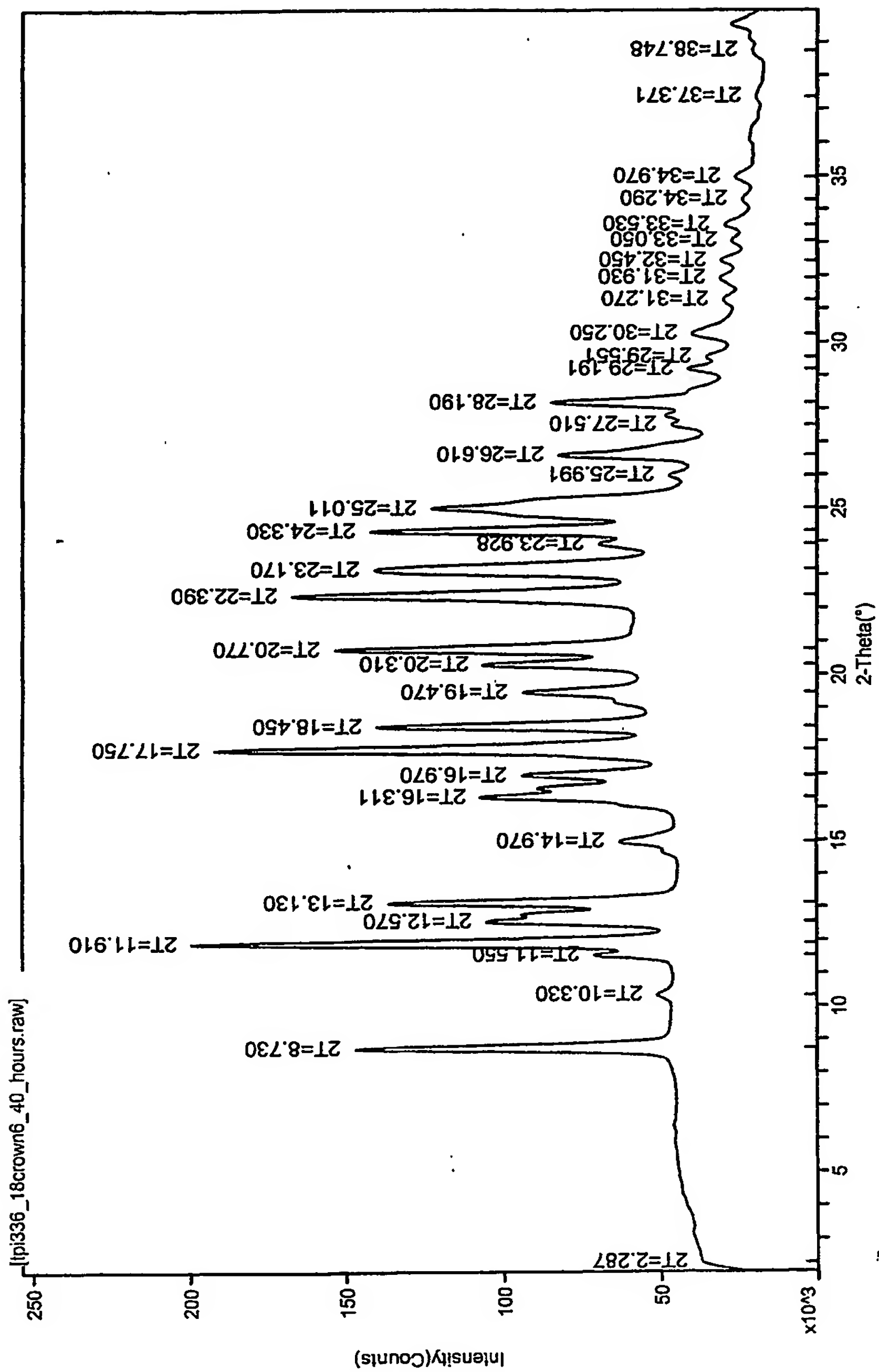


FIG. 5B

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DSC

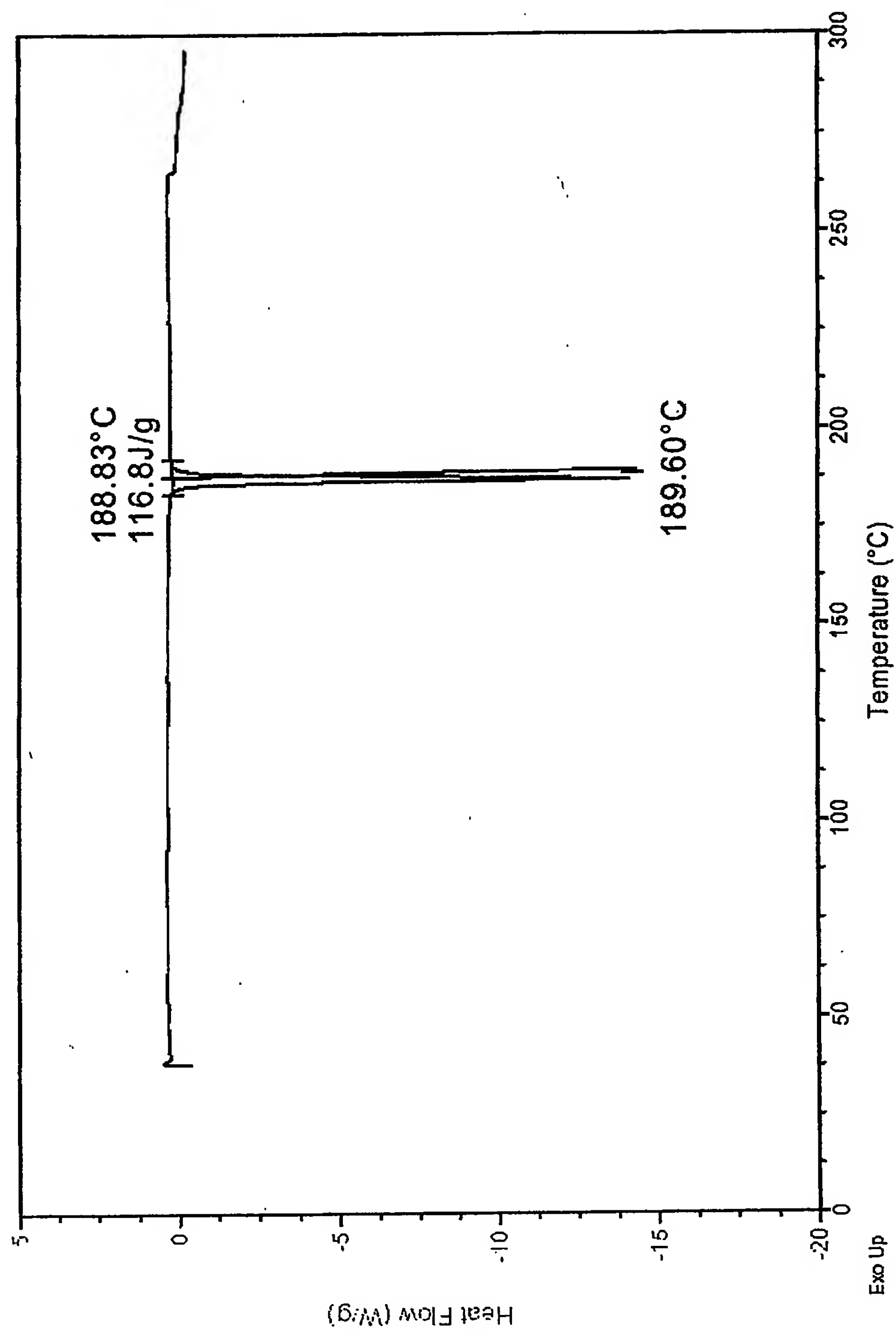


FIG. 6

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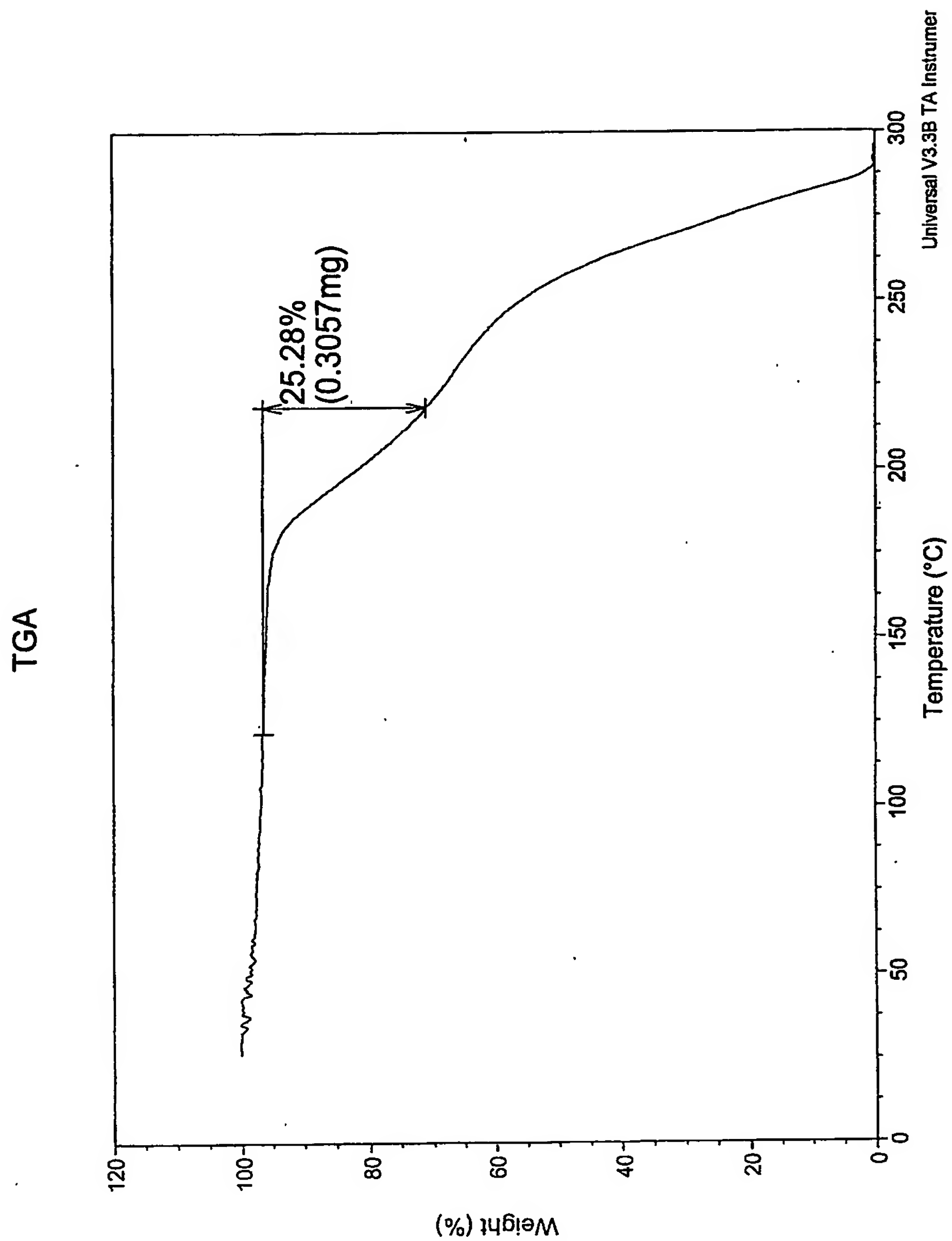


FIG. 7

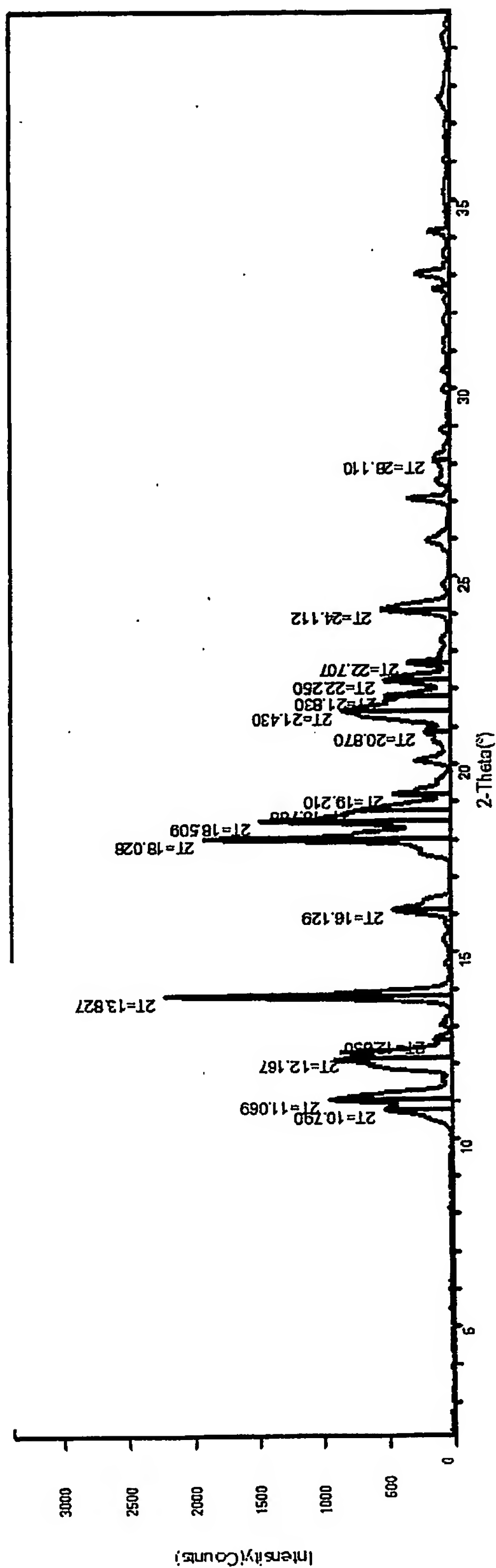


FIG. 8A

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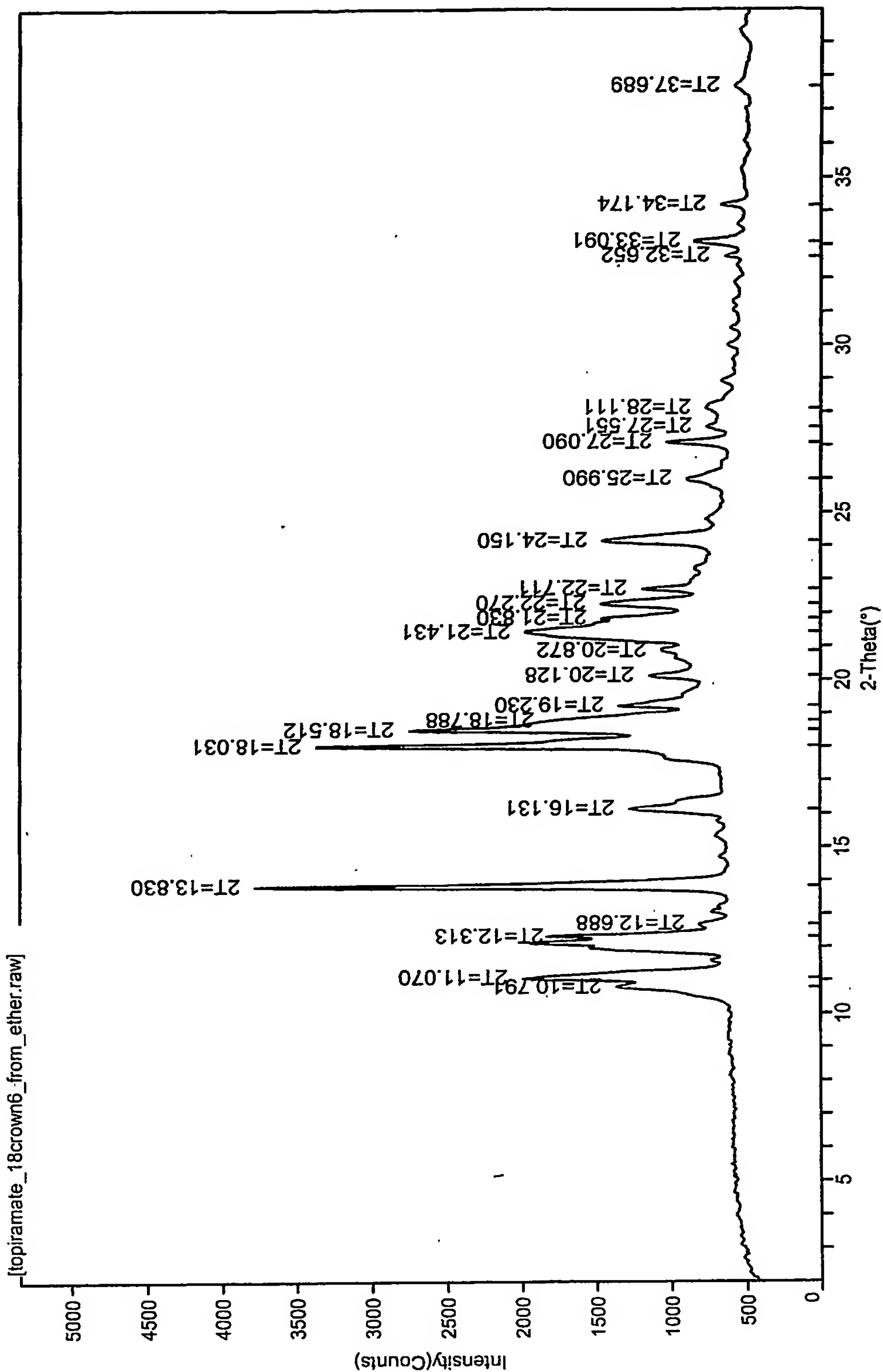


FIG. 8B

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DSC

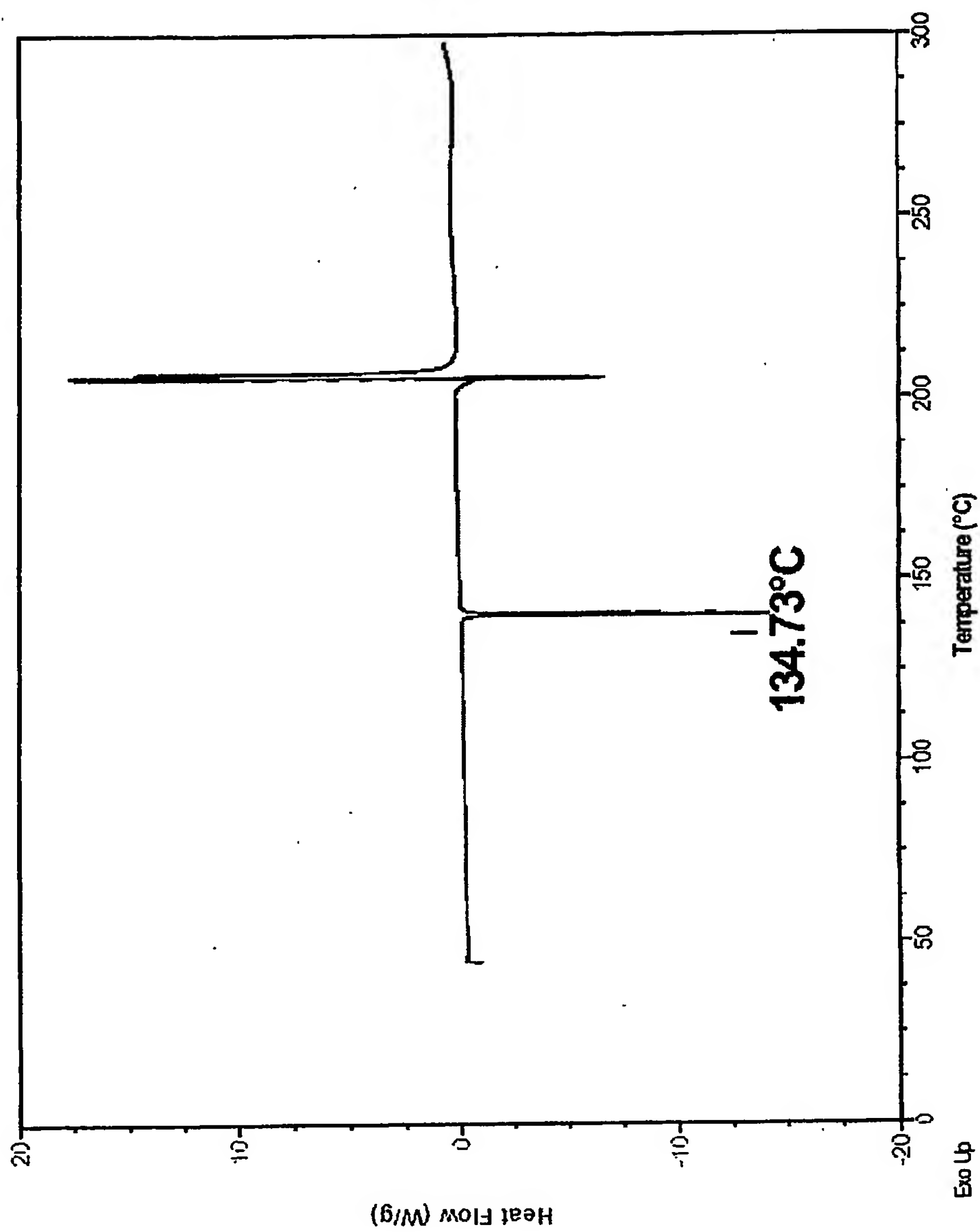


FIG. 9



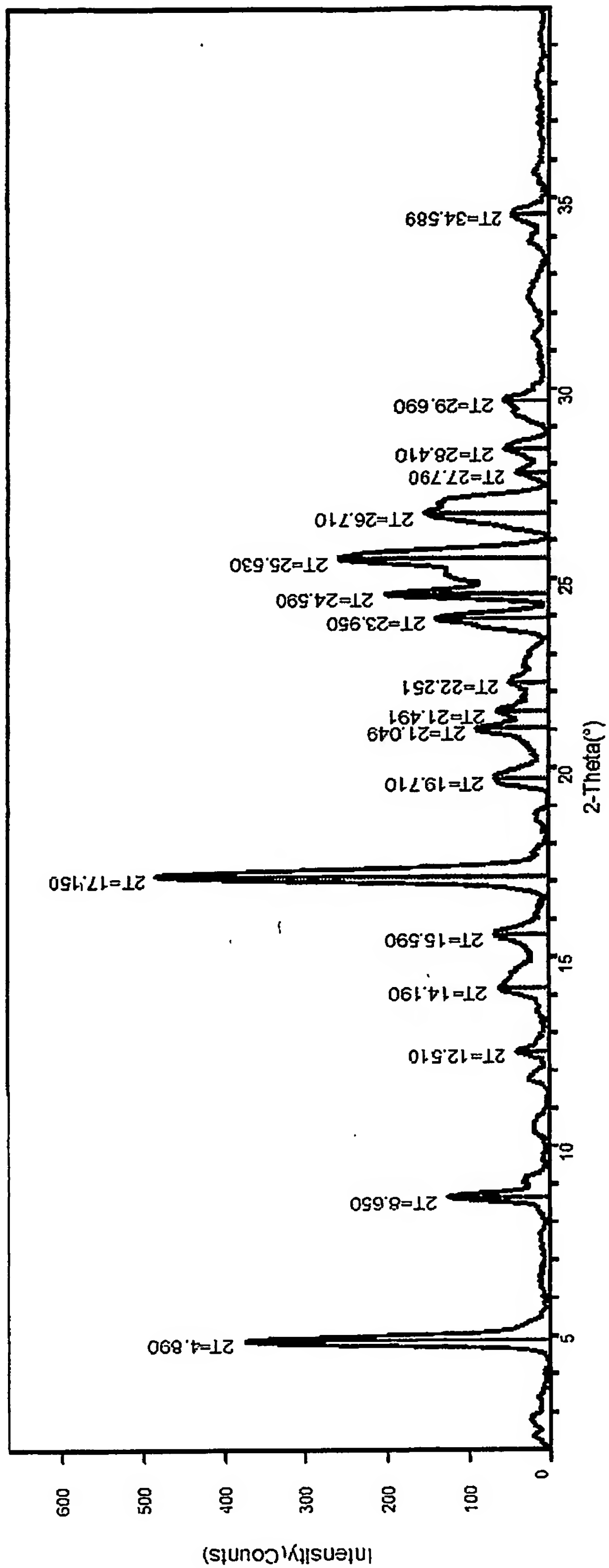


FIG. 10A

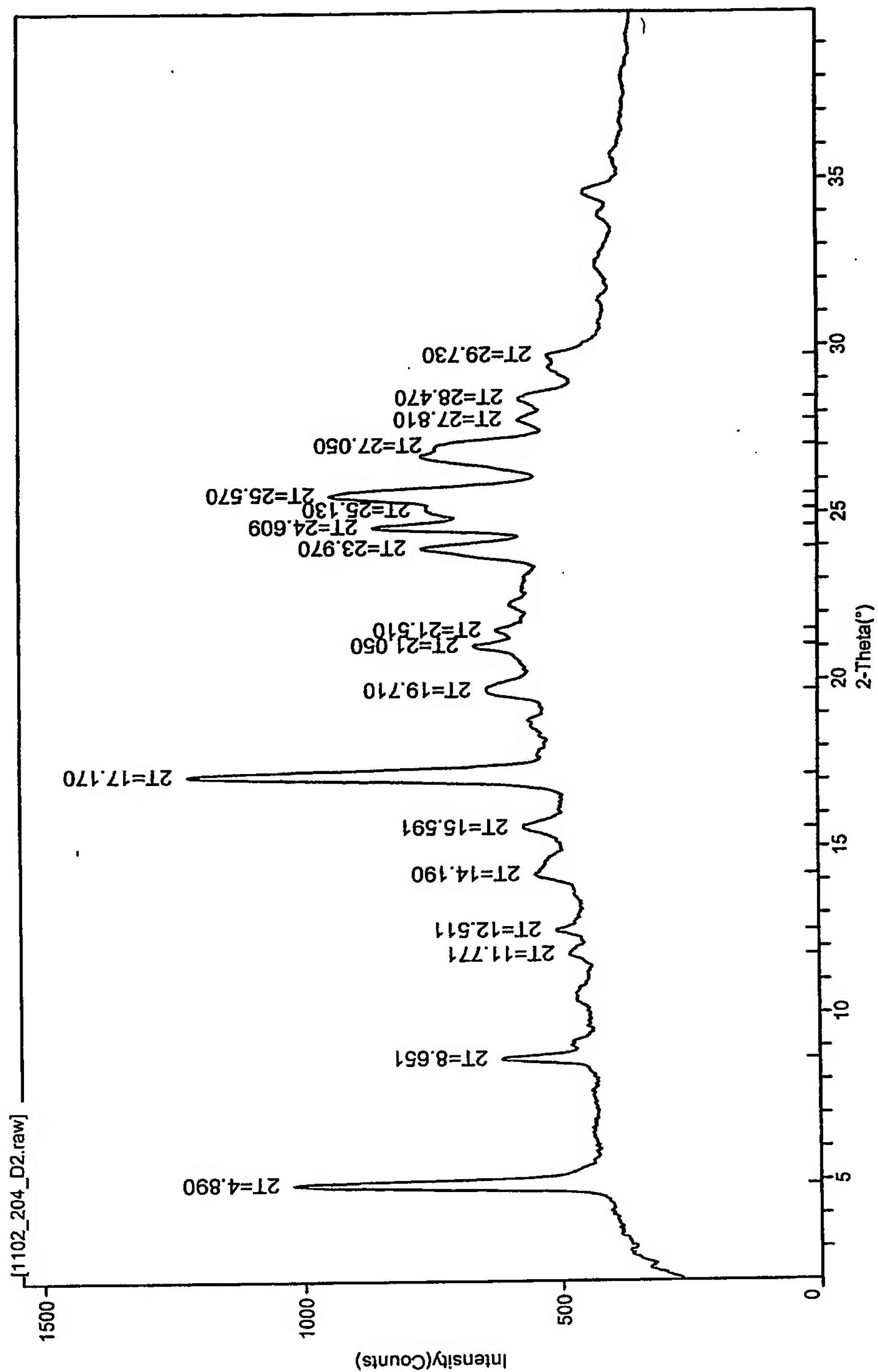


FIG. 10B

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DSC

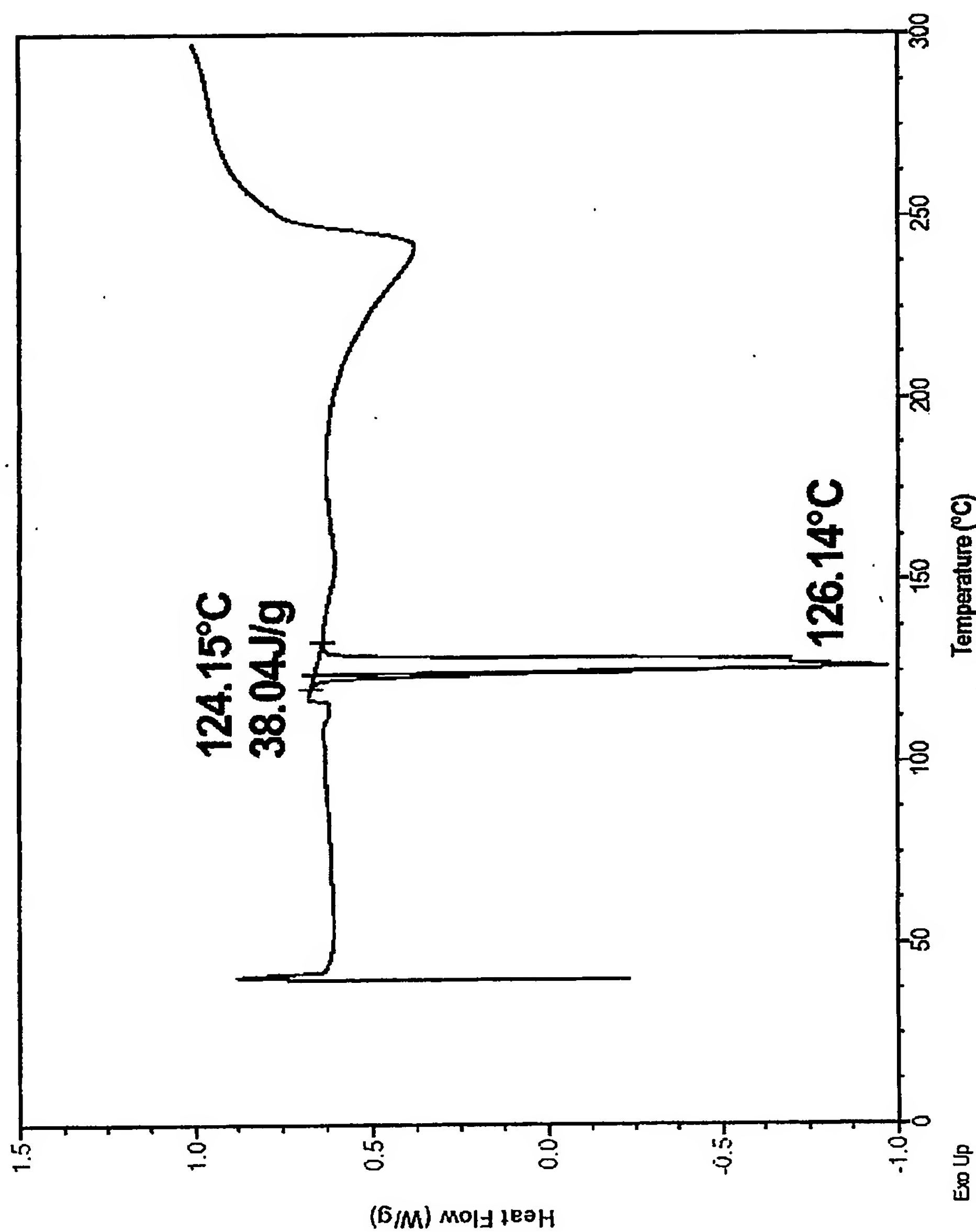


FIG. 11

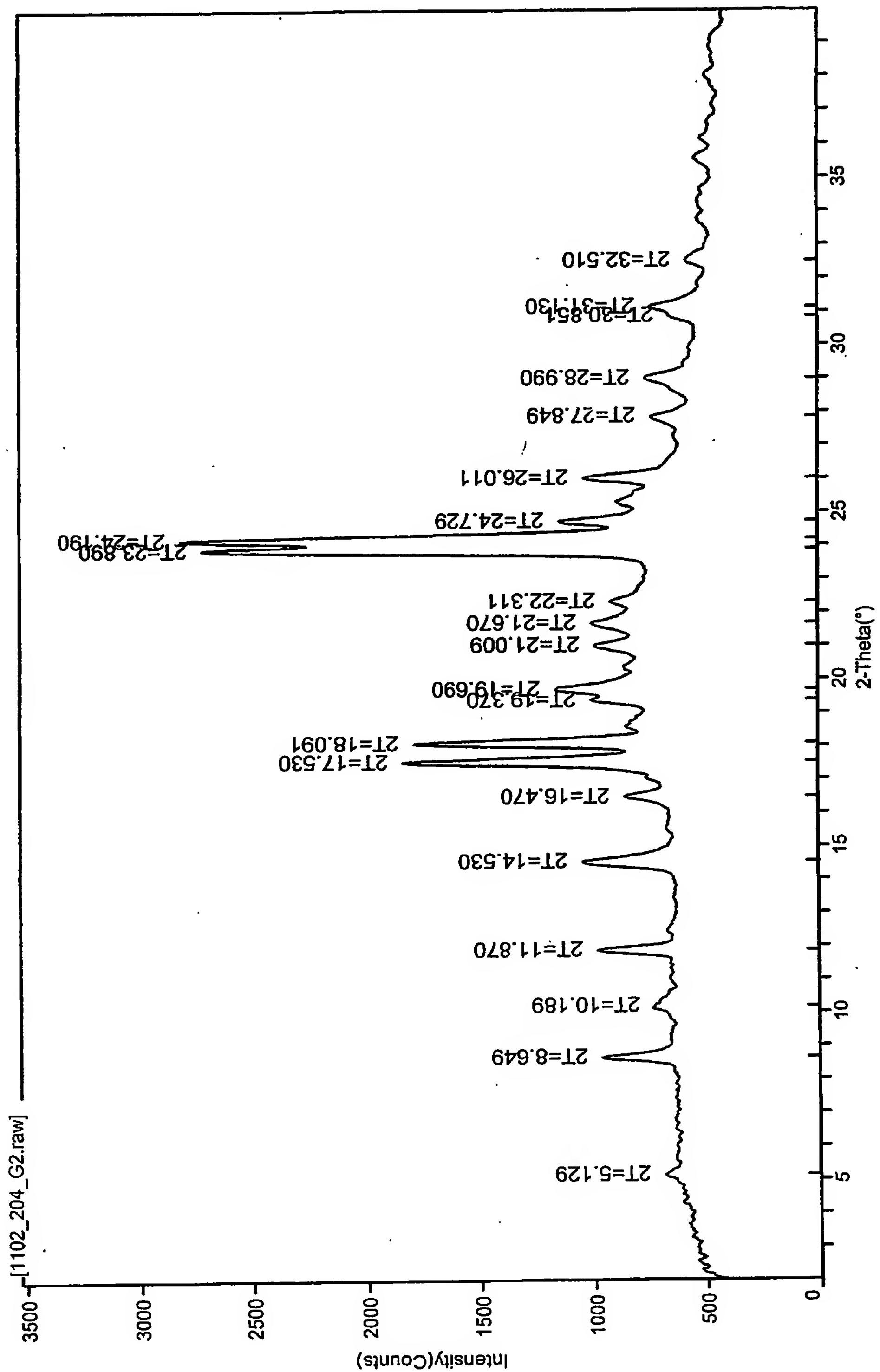


FIG. 12

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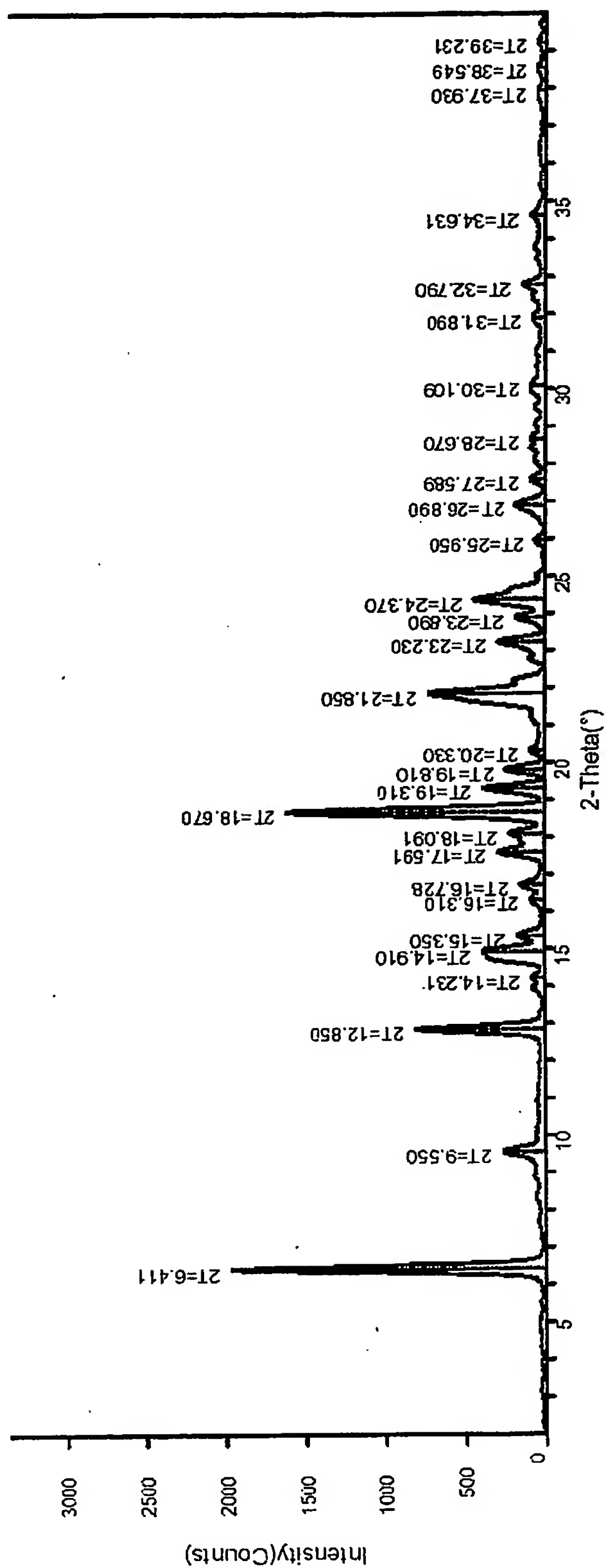


FIG. 13A

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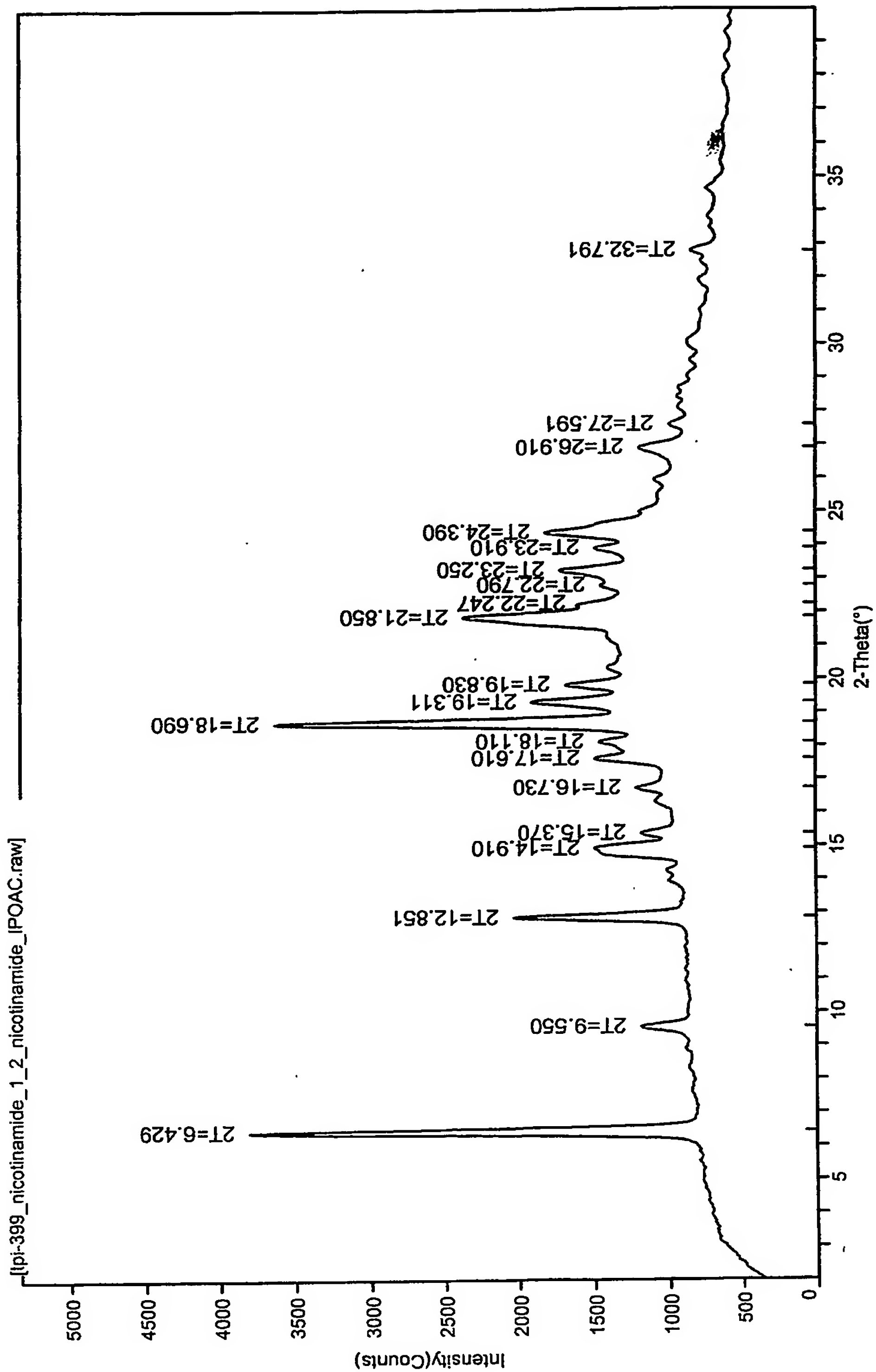


FIG. 13B

95/56



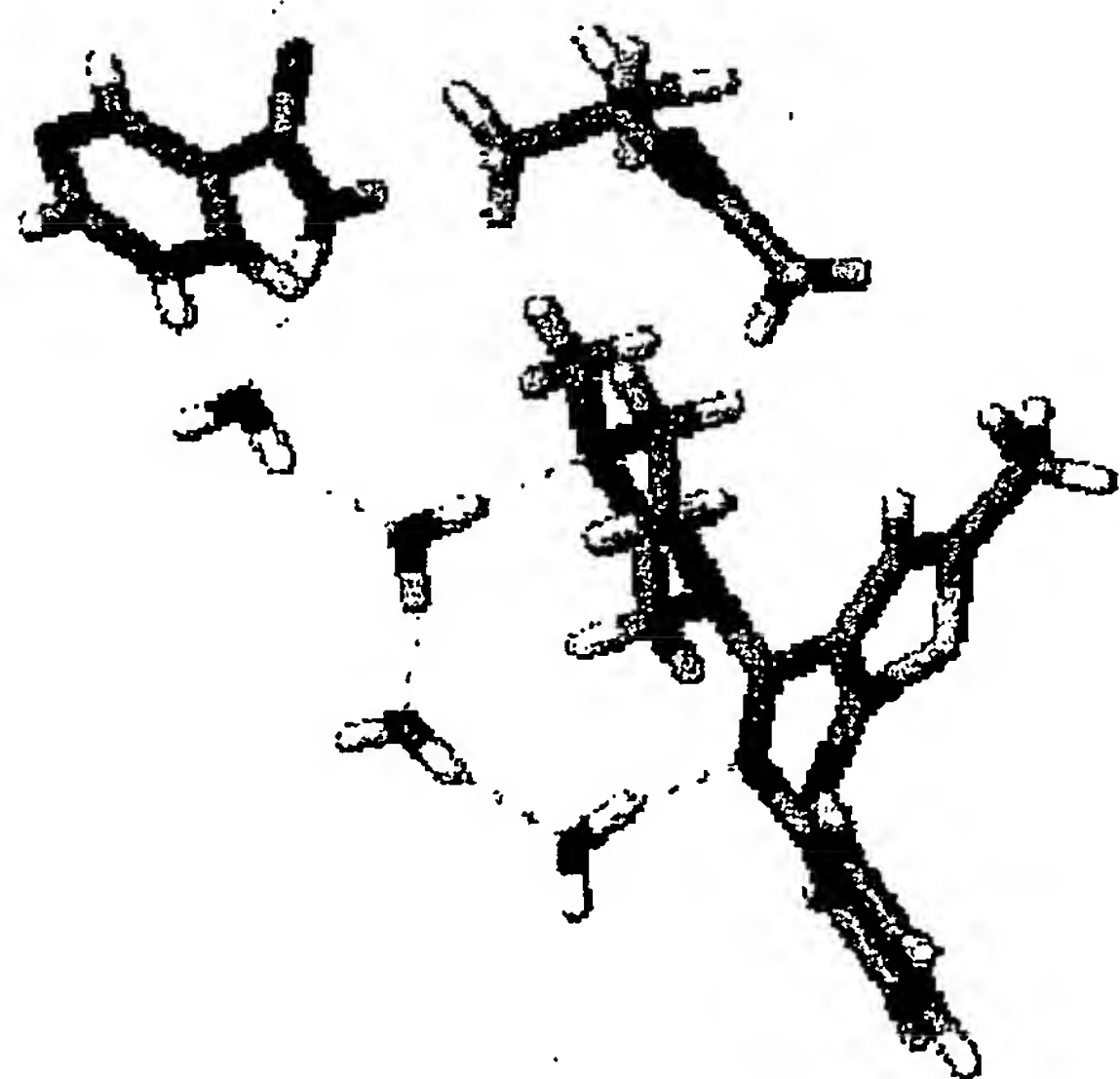


FIG. 14A

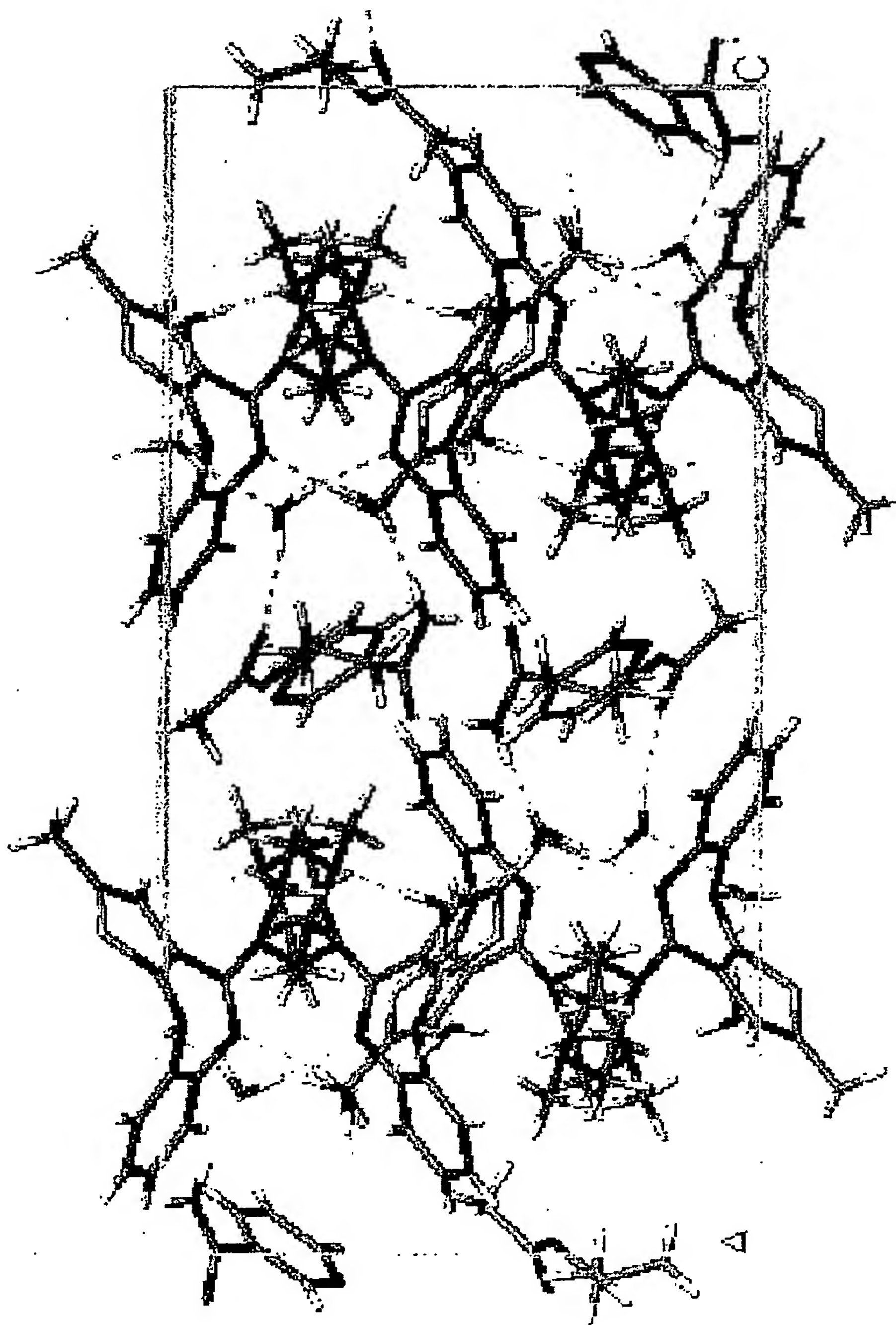


FIG. 14B

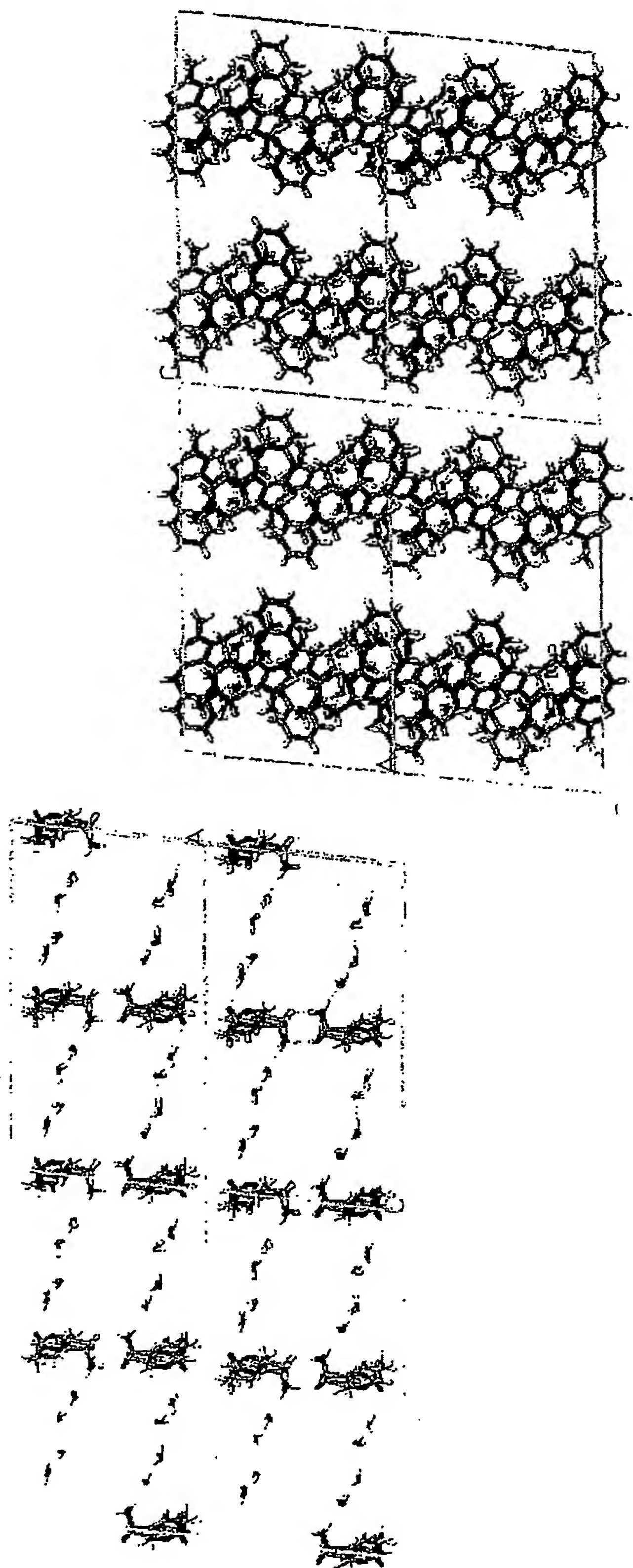


FIG. 14C

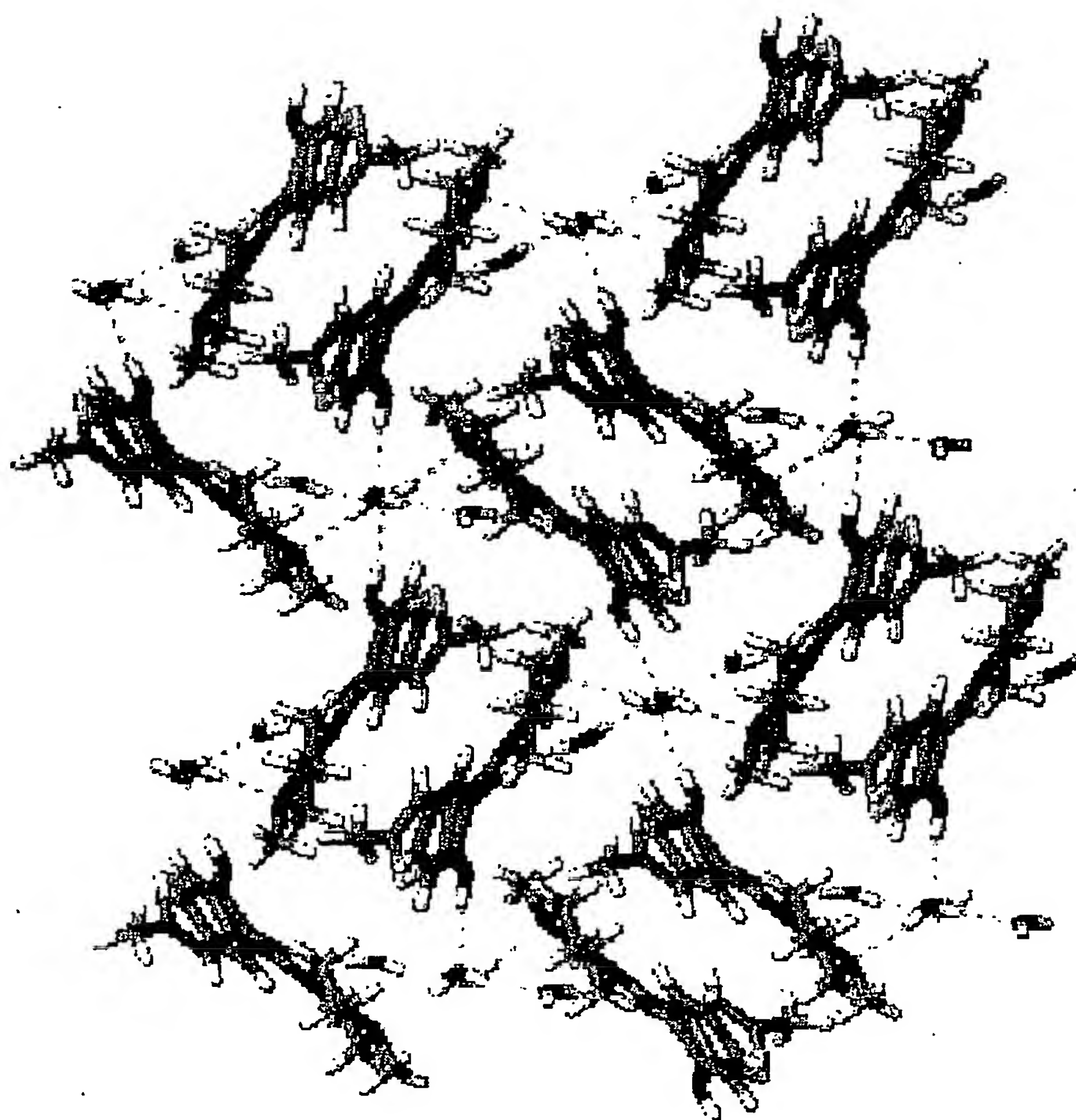


FIG. 14D

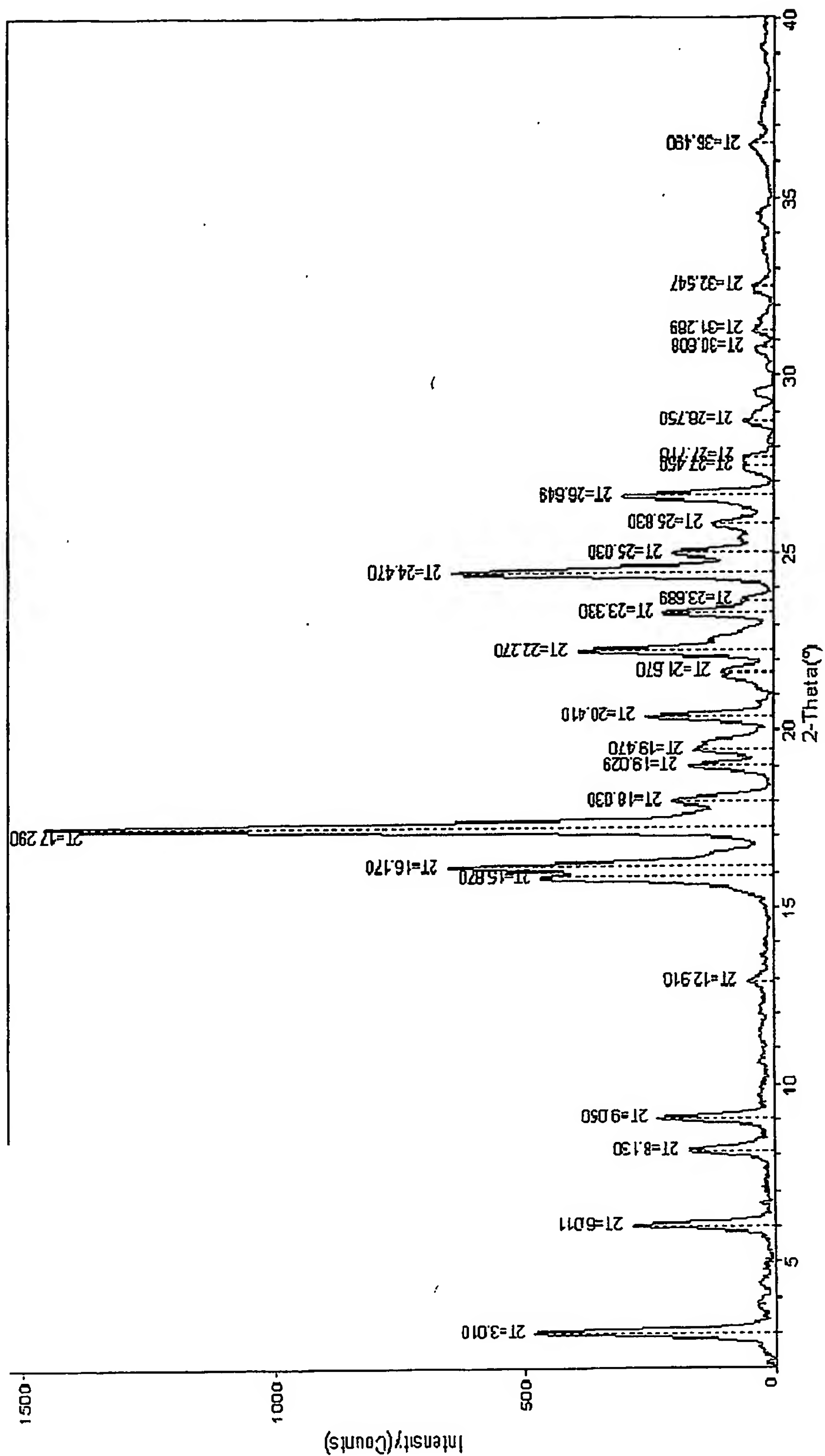


FIG. 15

DSC

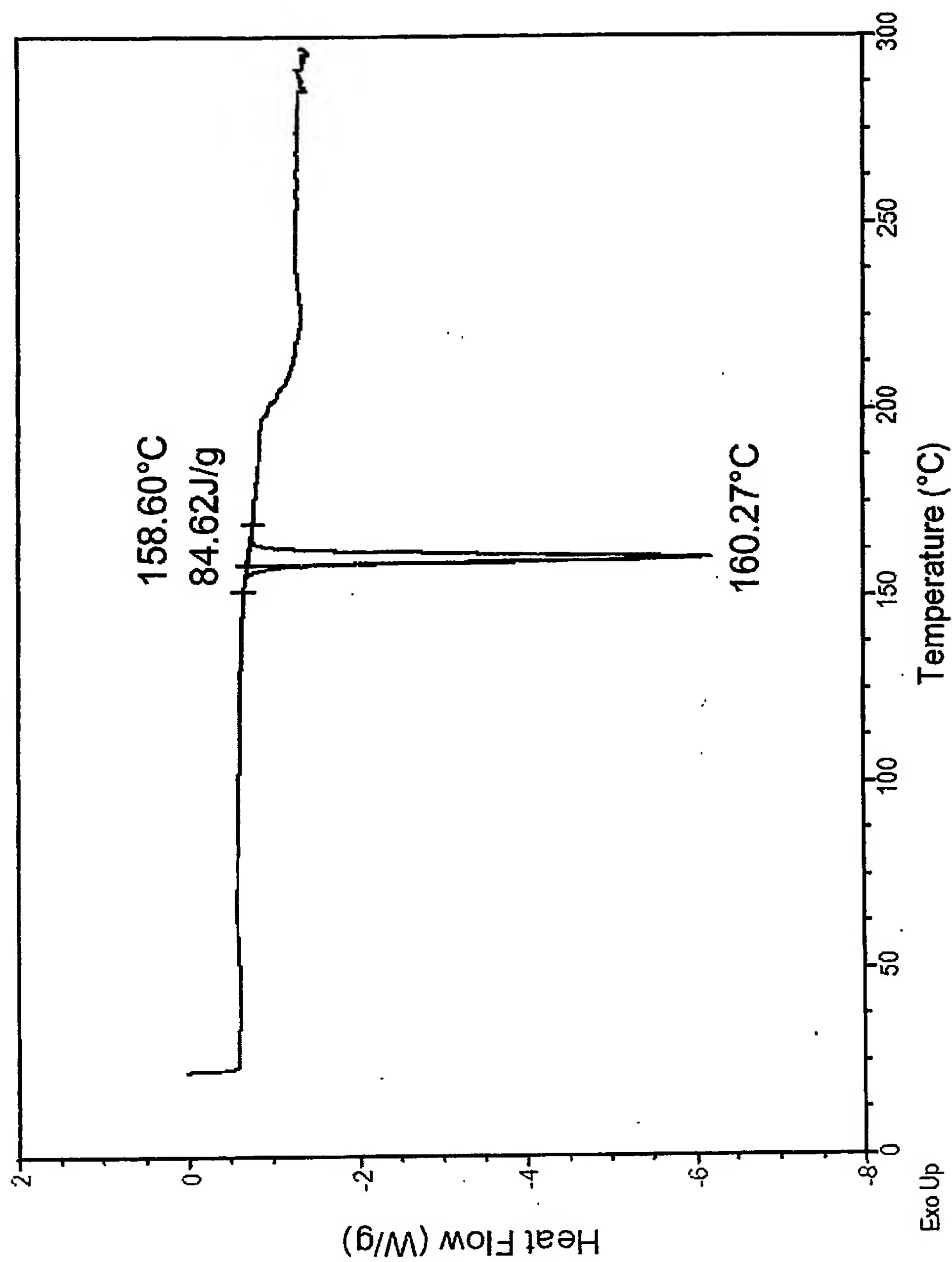


FIG. 16

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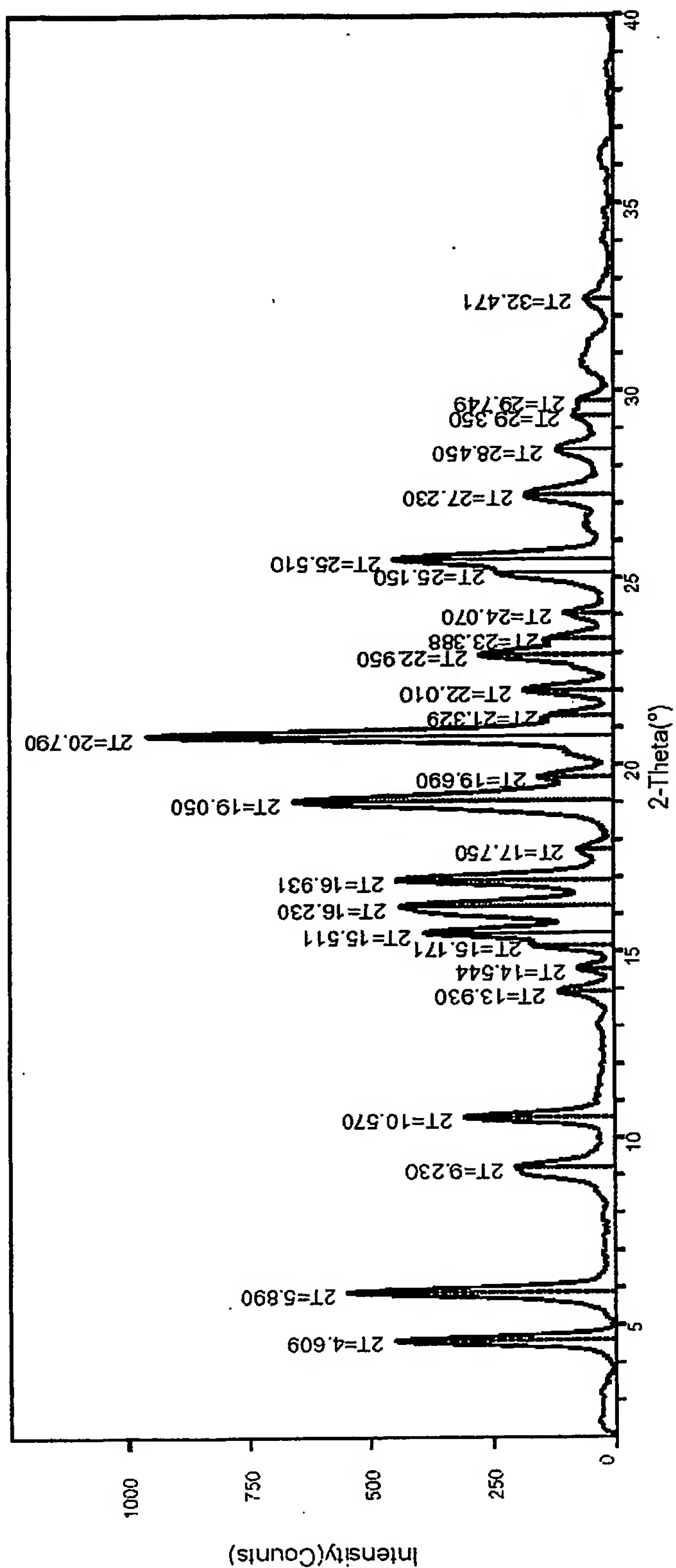


FIG. 17

DSC

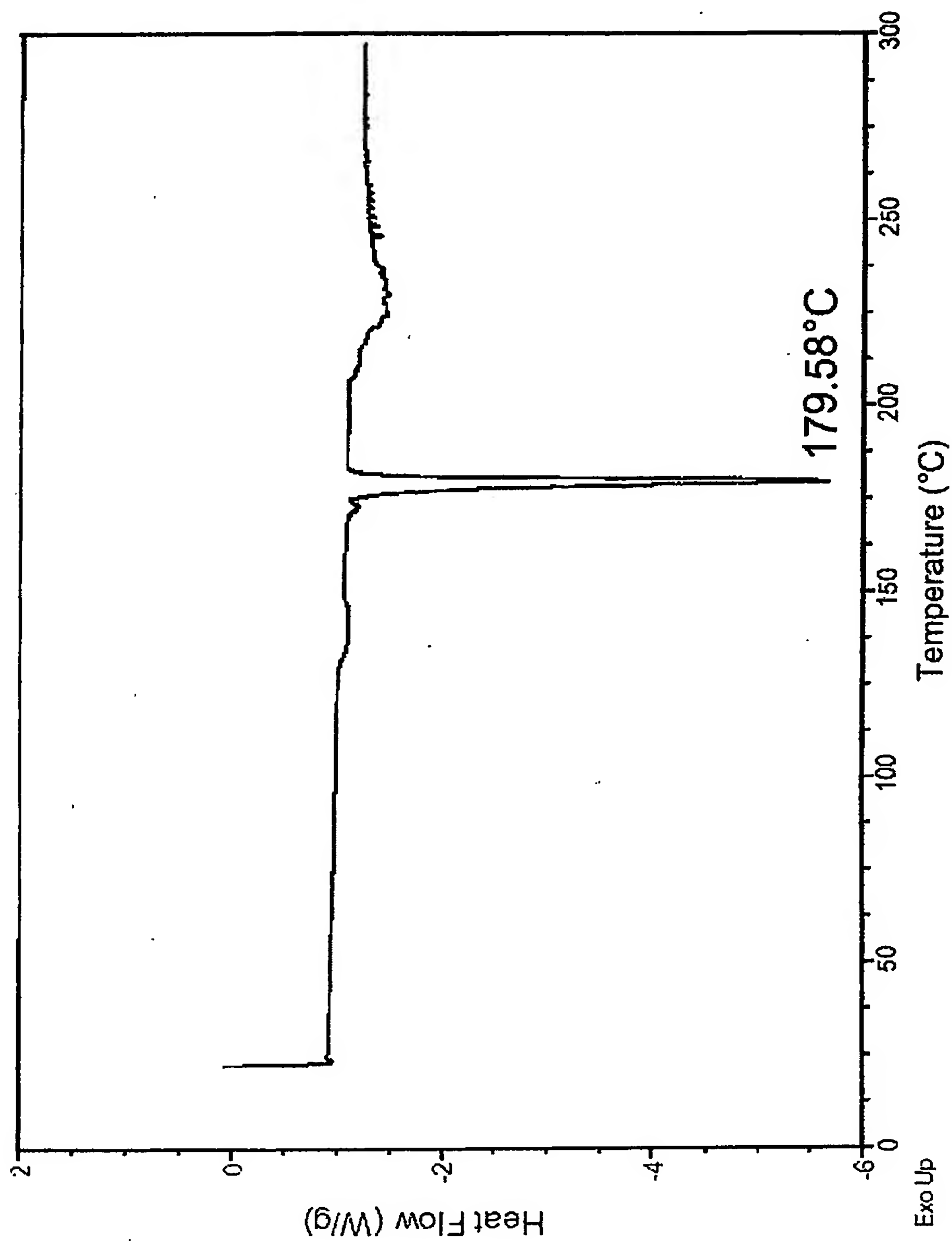


FIG. 18

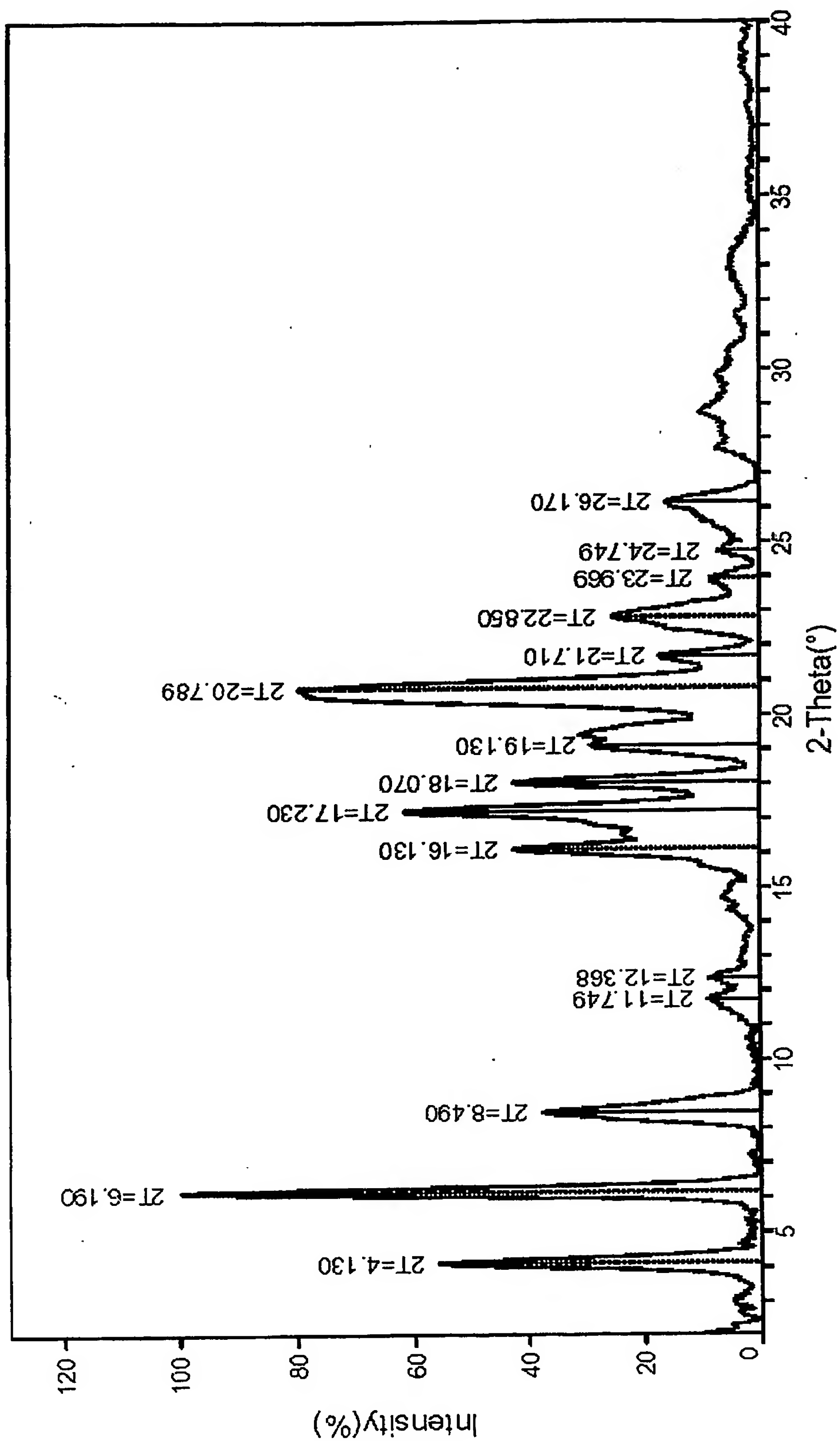


FIG. 19

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DSC

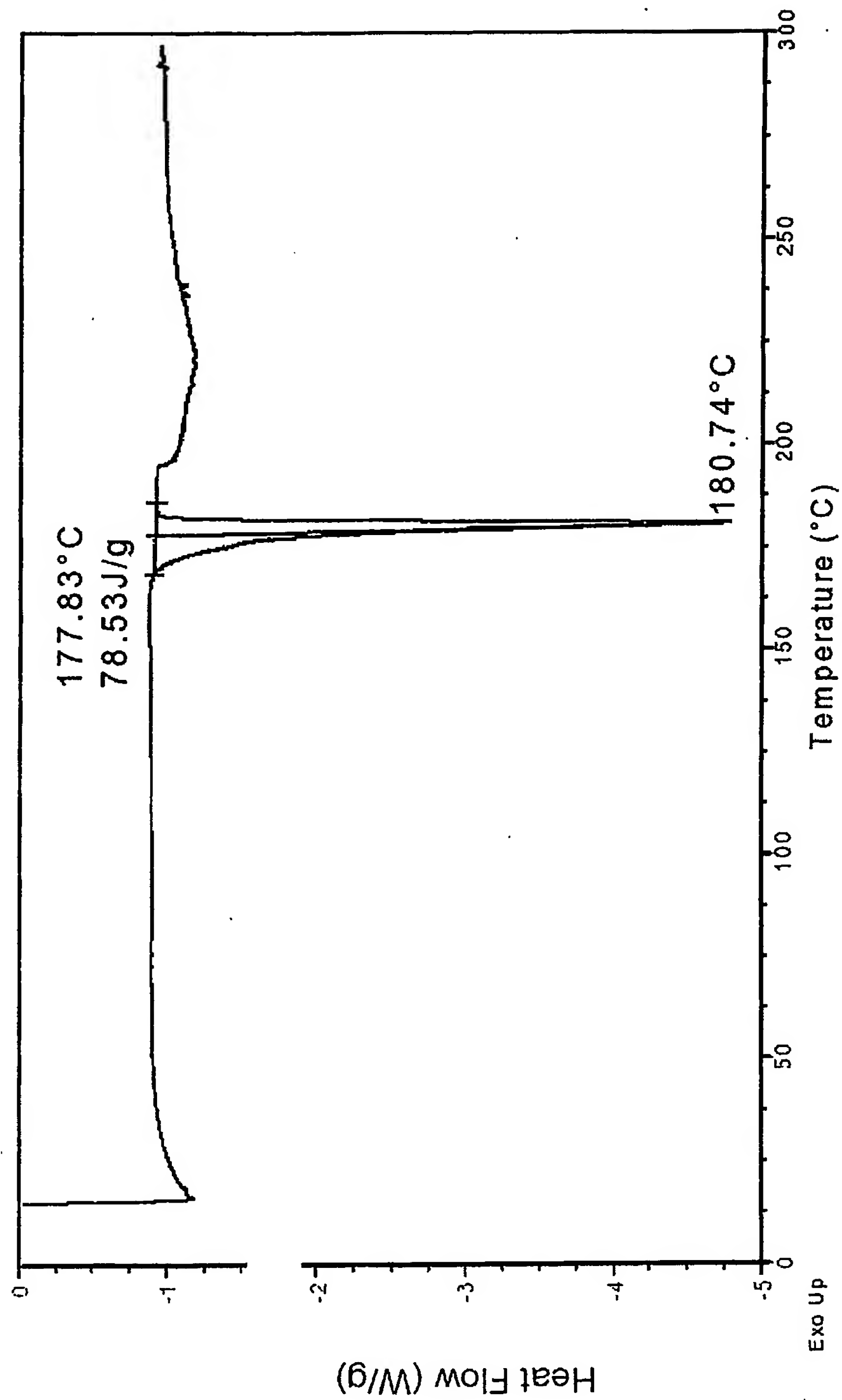


FIG. 20

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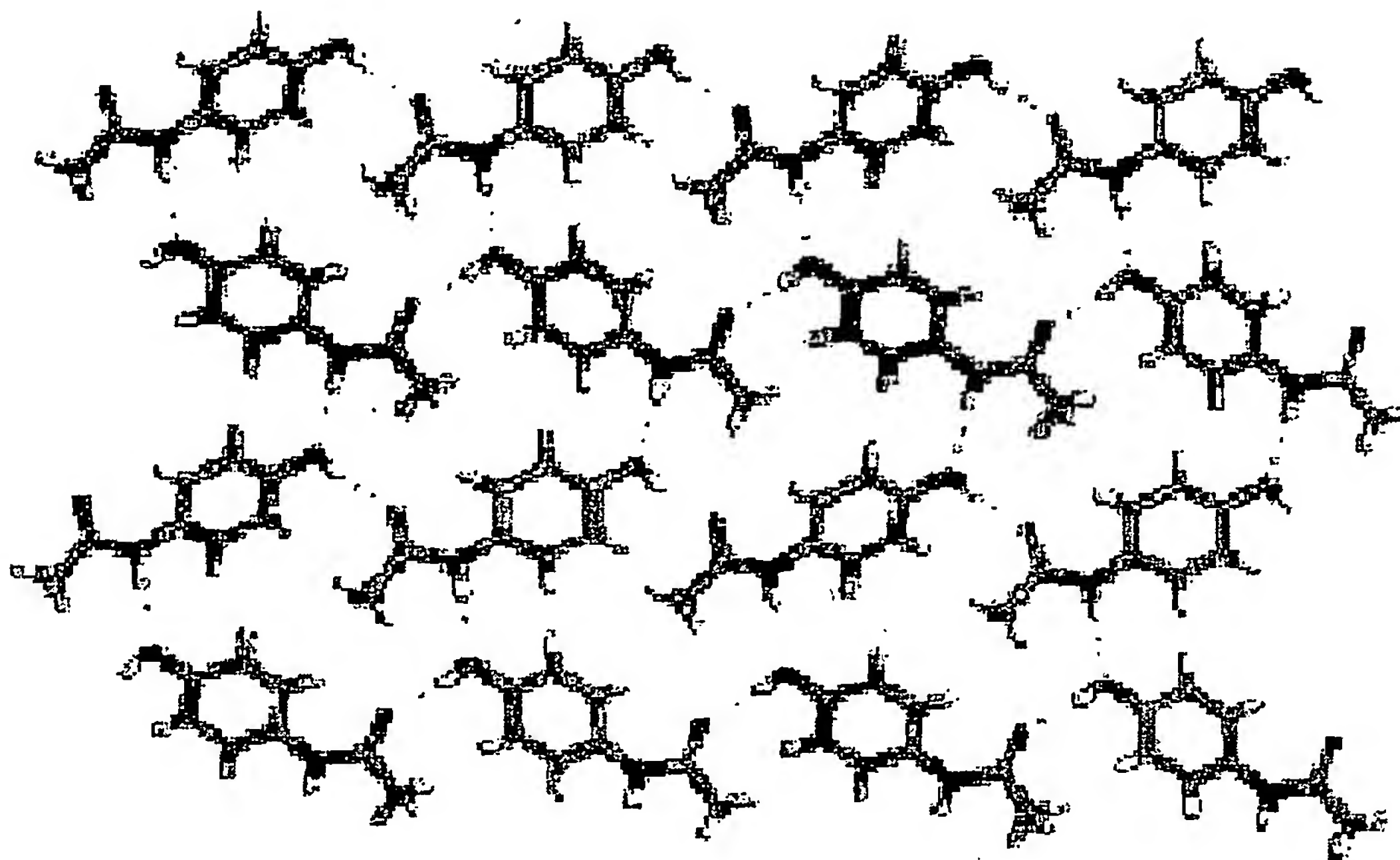


FIG. 38A

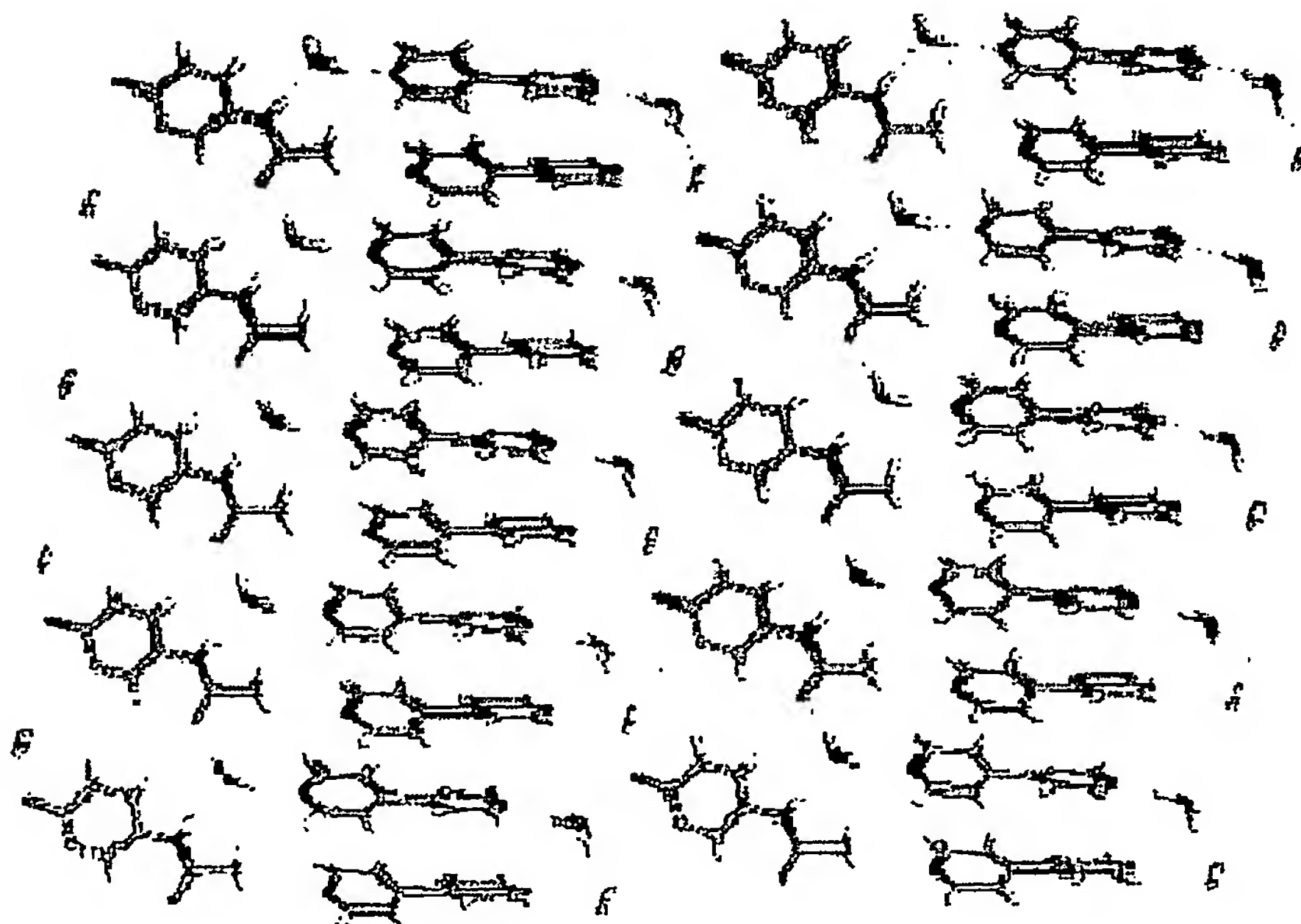


FIG. 38B

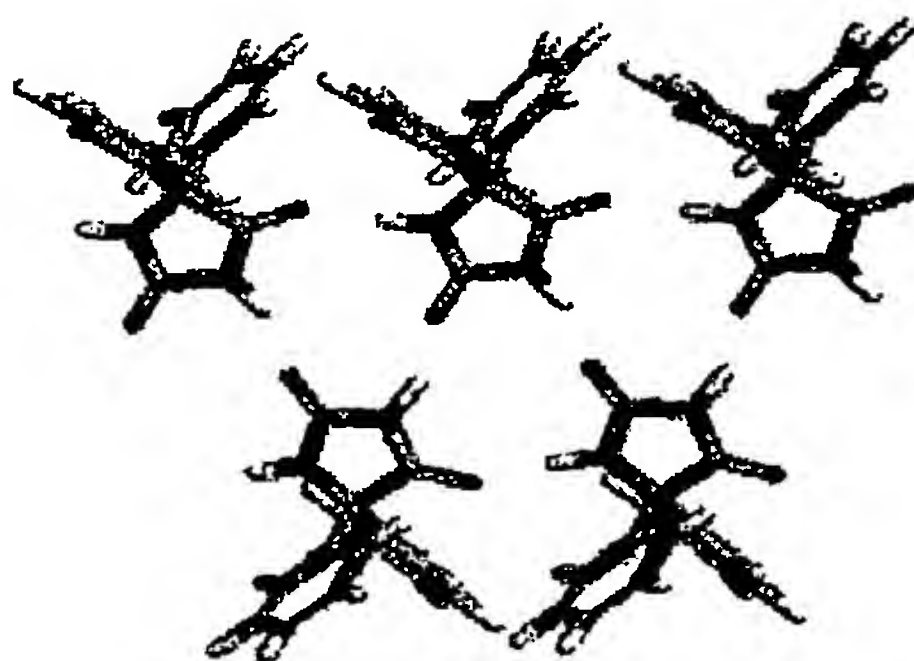


FIG. 39A

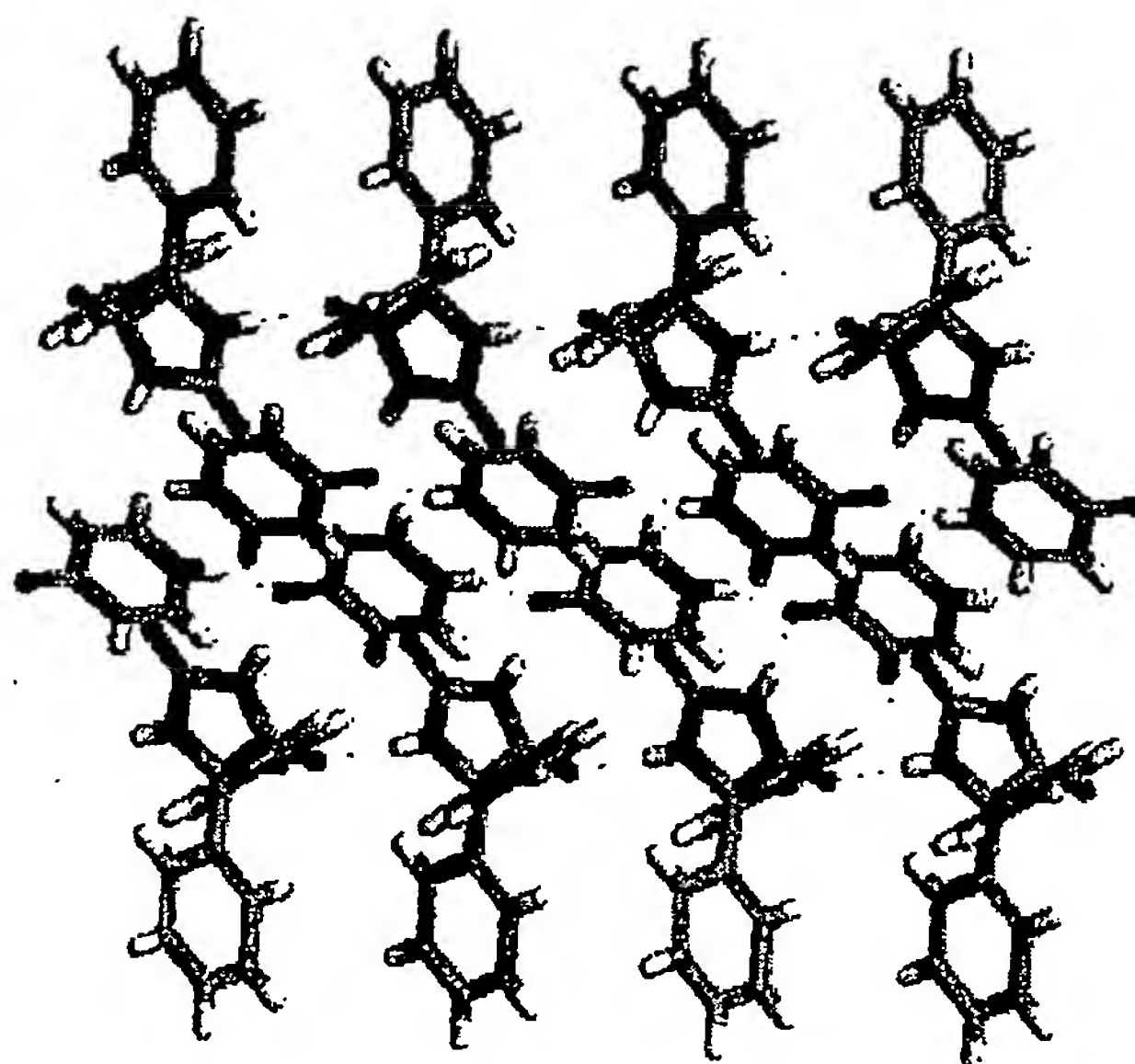


FIG. 39B



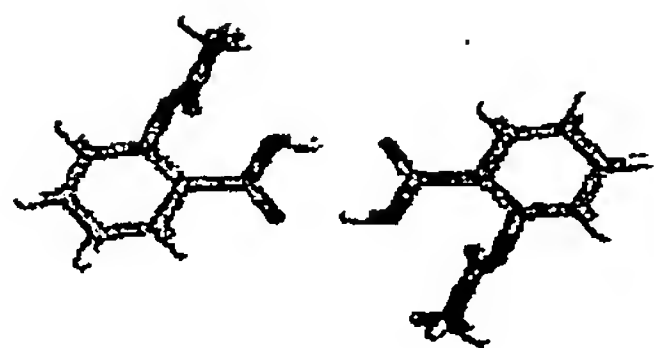


FIG. 40A

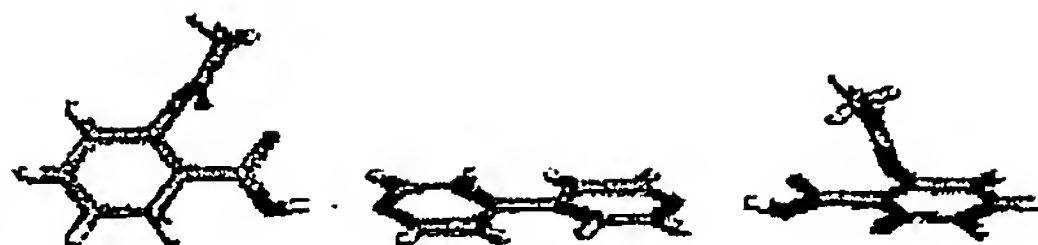


FIG. 40C

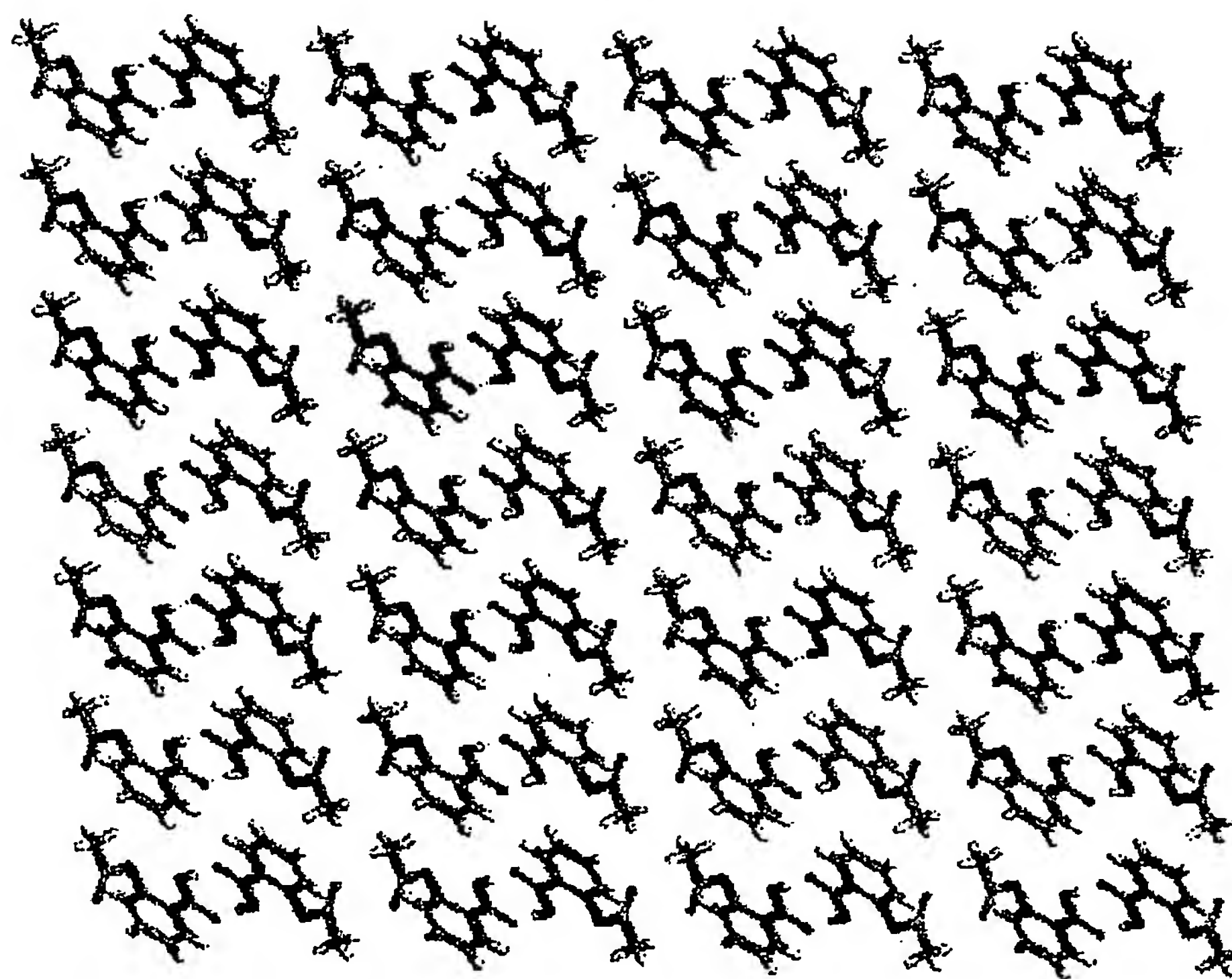


FIG. 40B

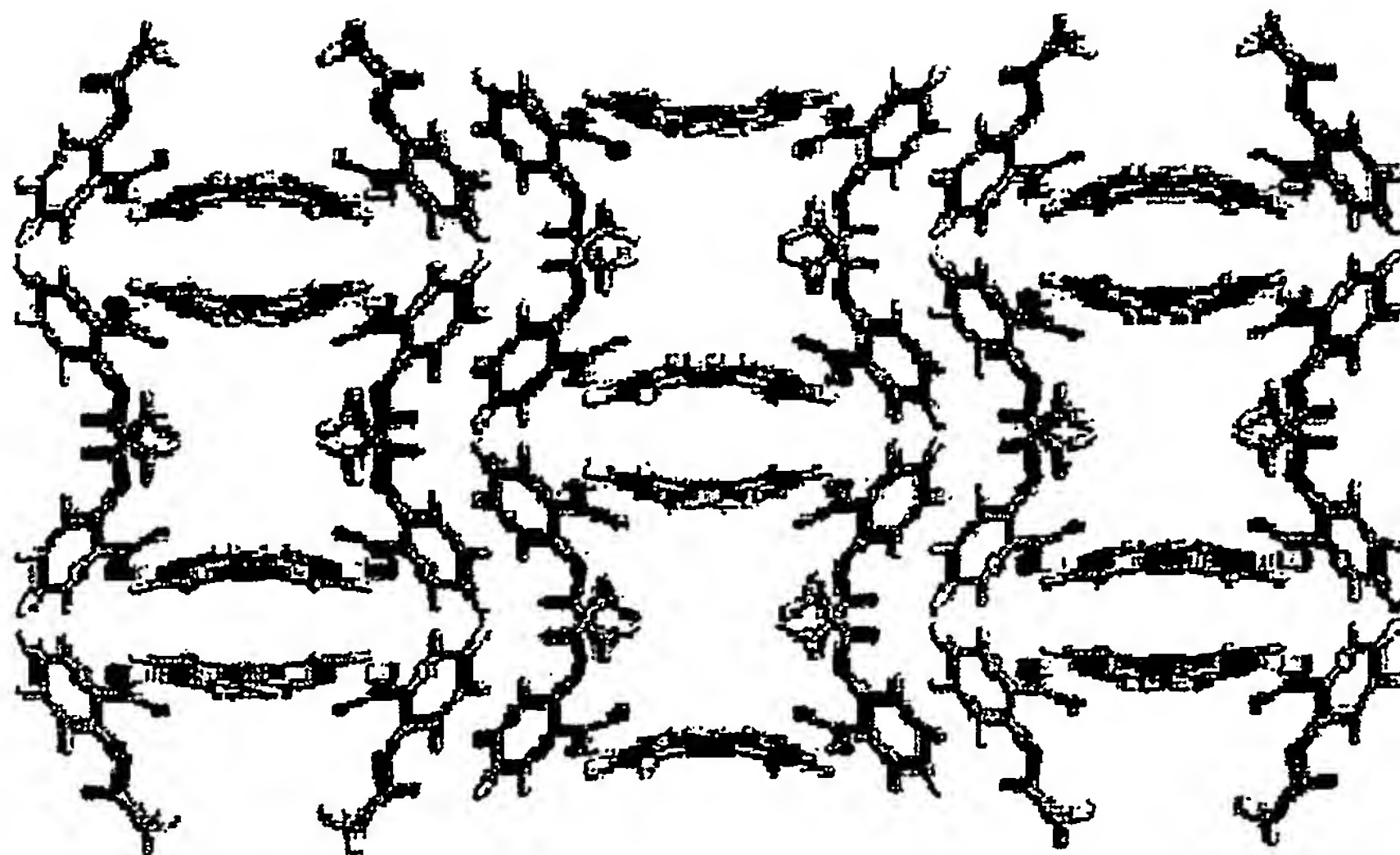


FIG. 40D



FIG. 41A

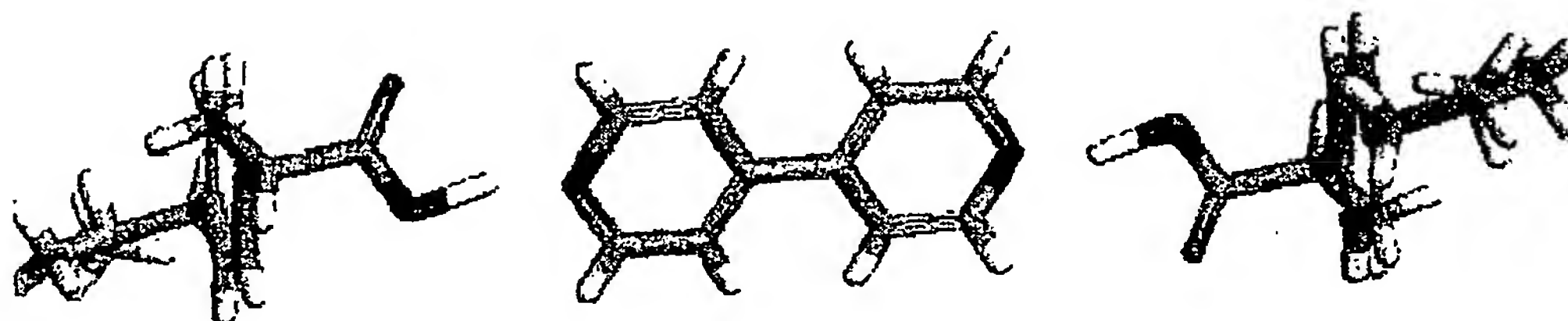


FIG. 41C

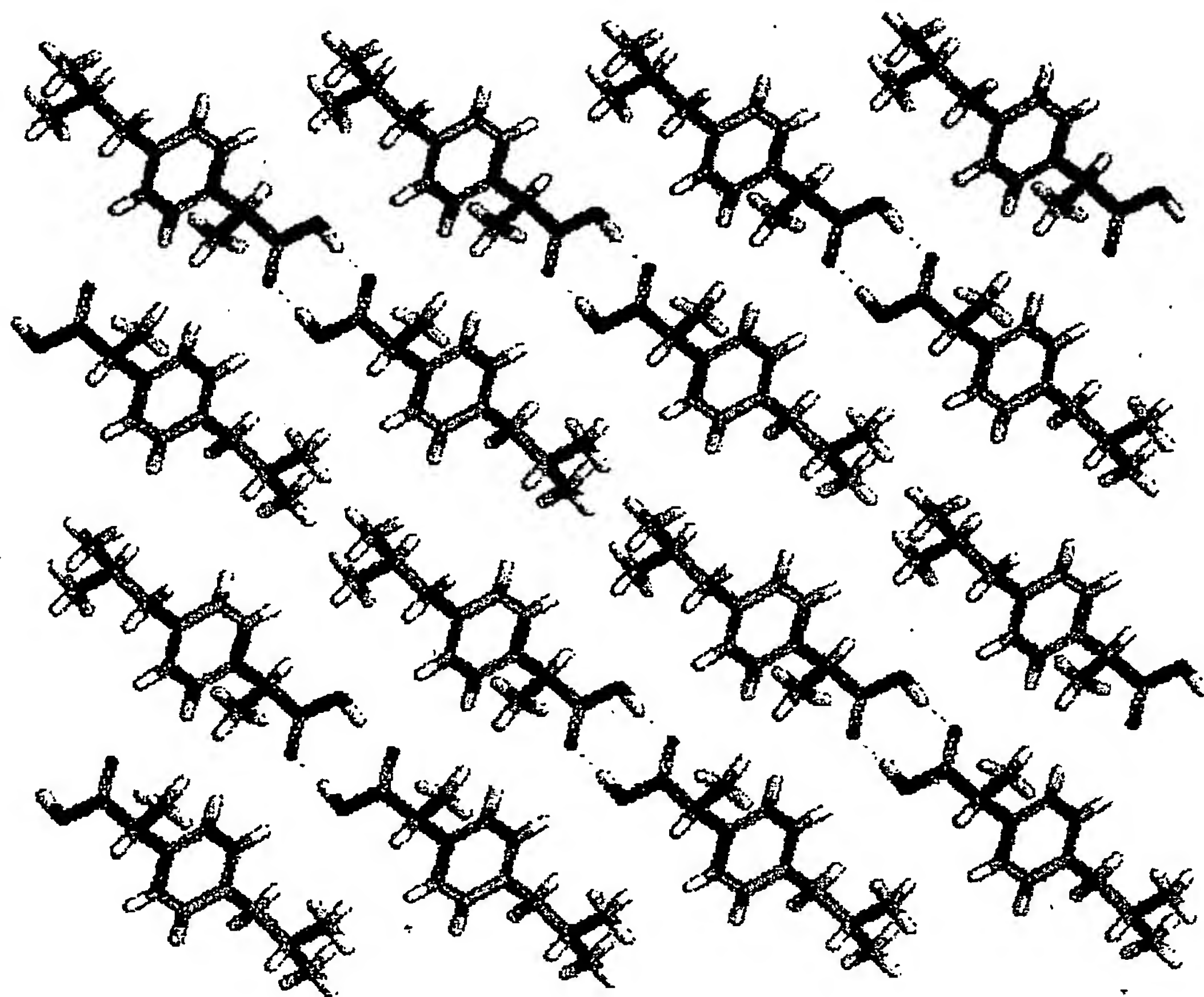


FIG. 41B

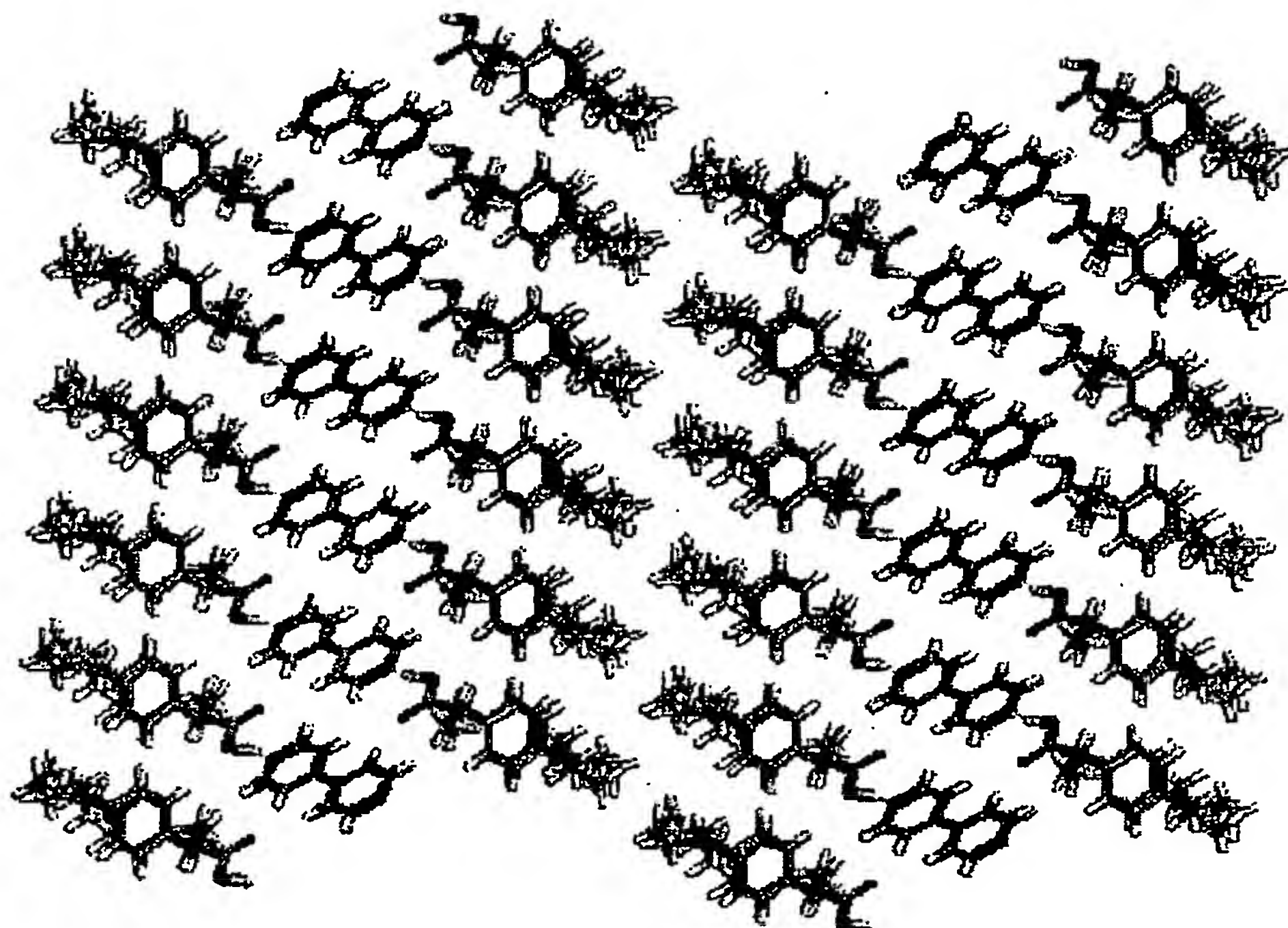


FIG. 41D

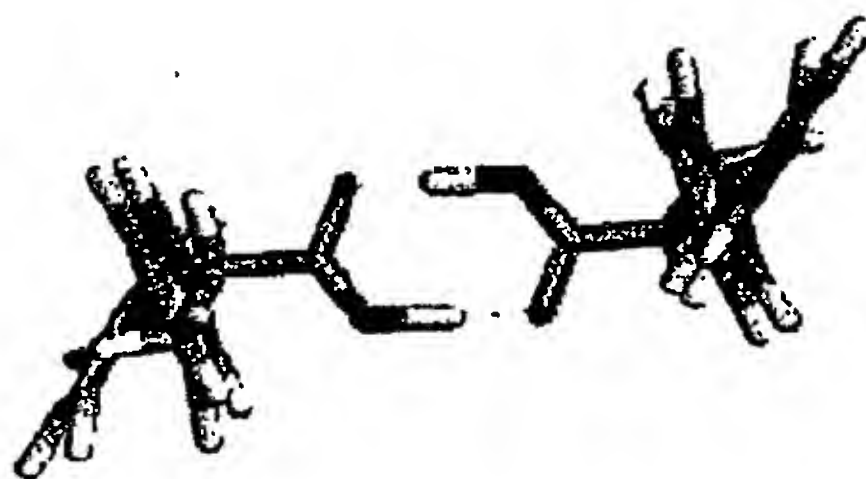


FIG. 42A

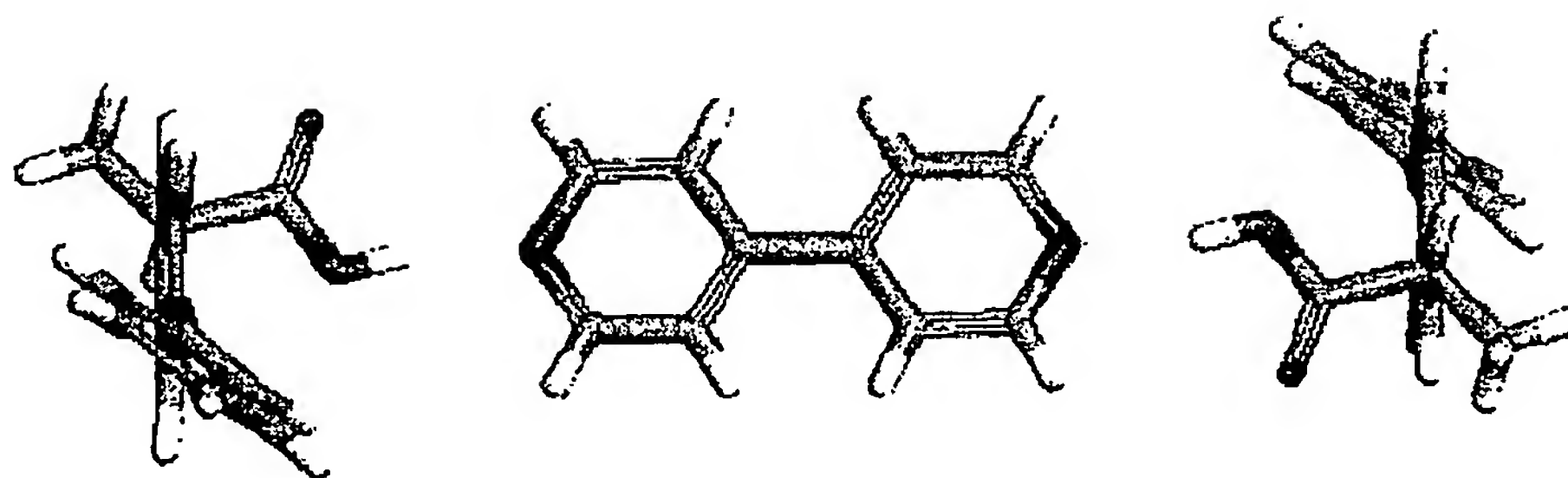


FIG. 42C

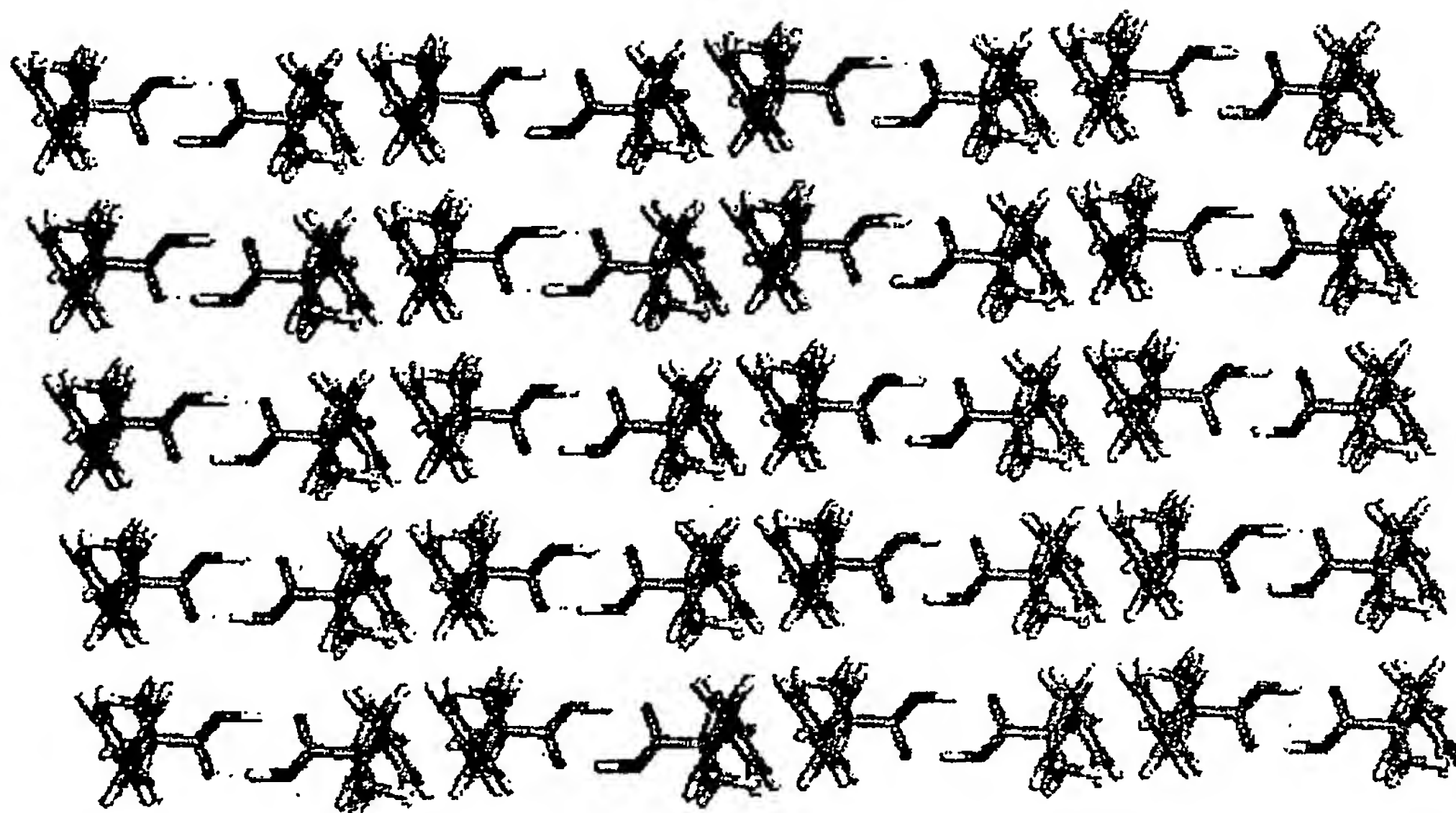


FIG. 42B

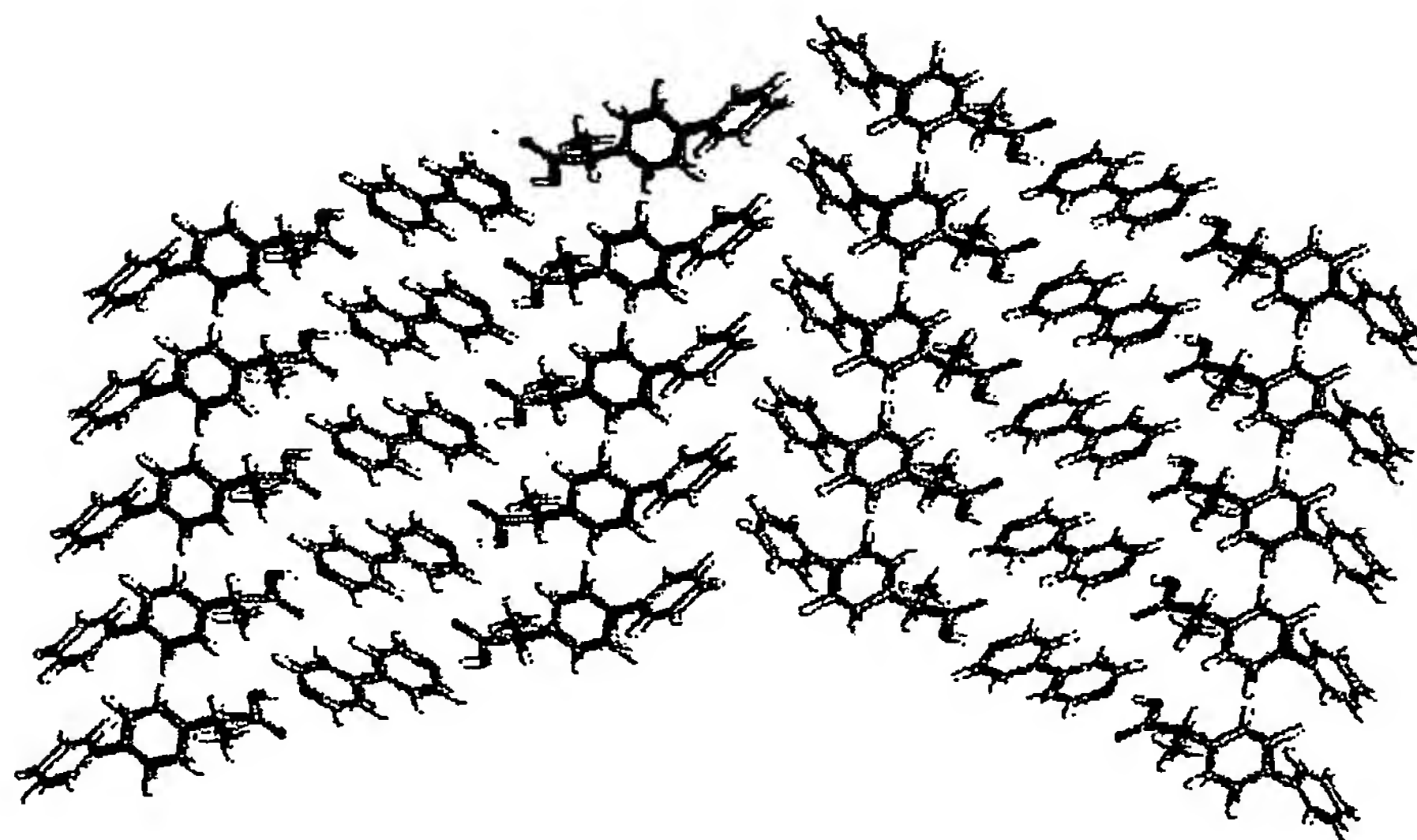


FIG. 42D



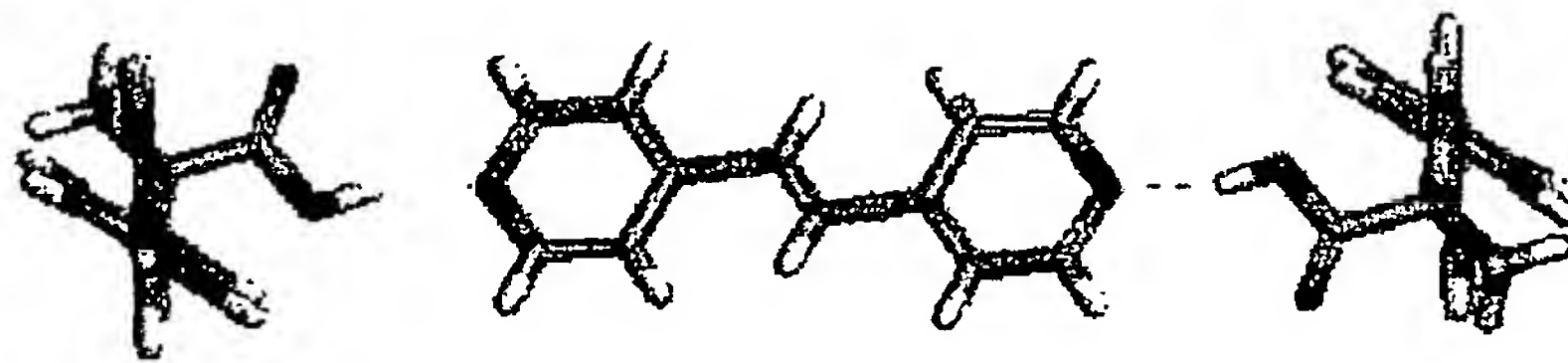


FIG. 43A

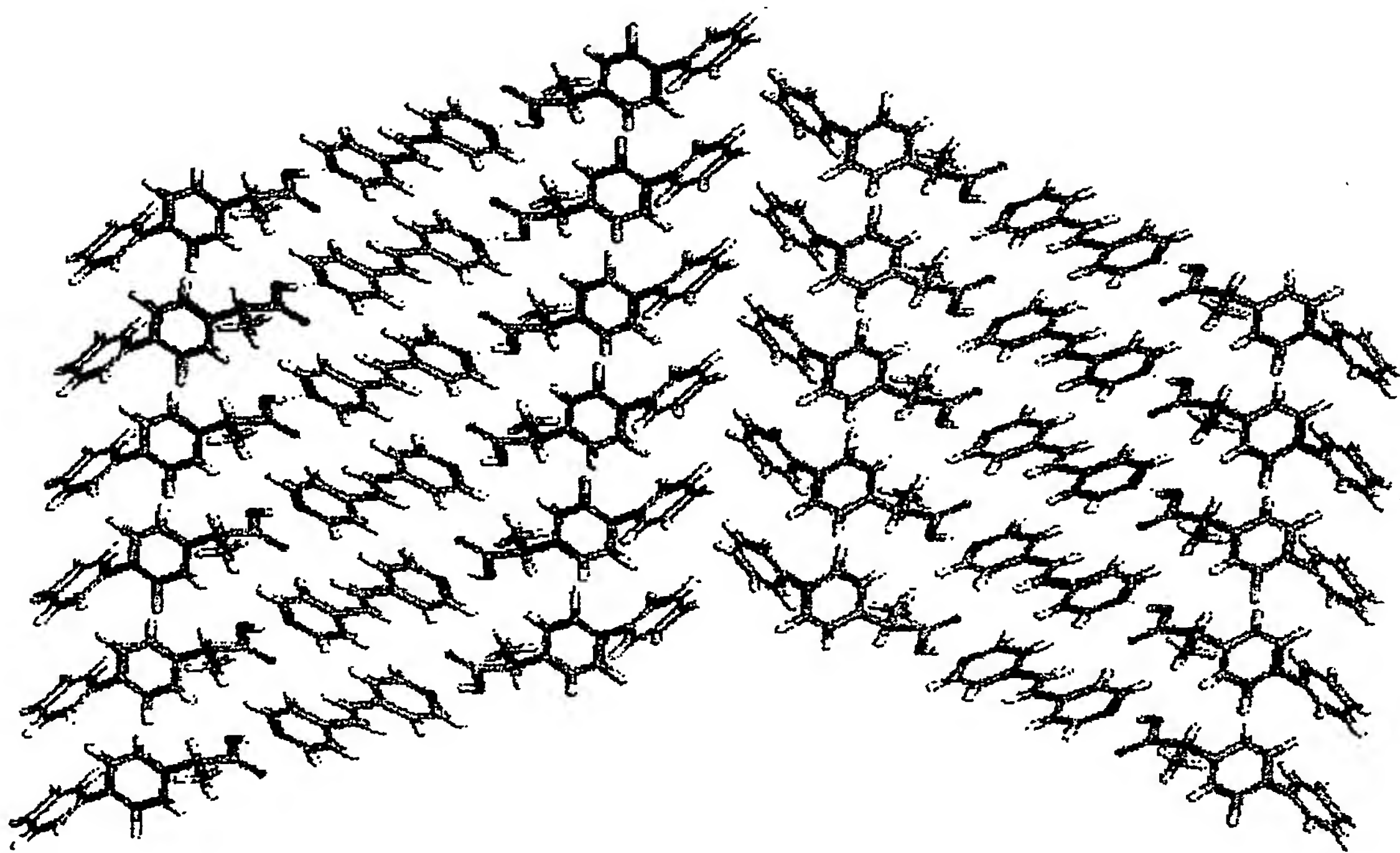


FIG. 43B



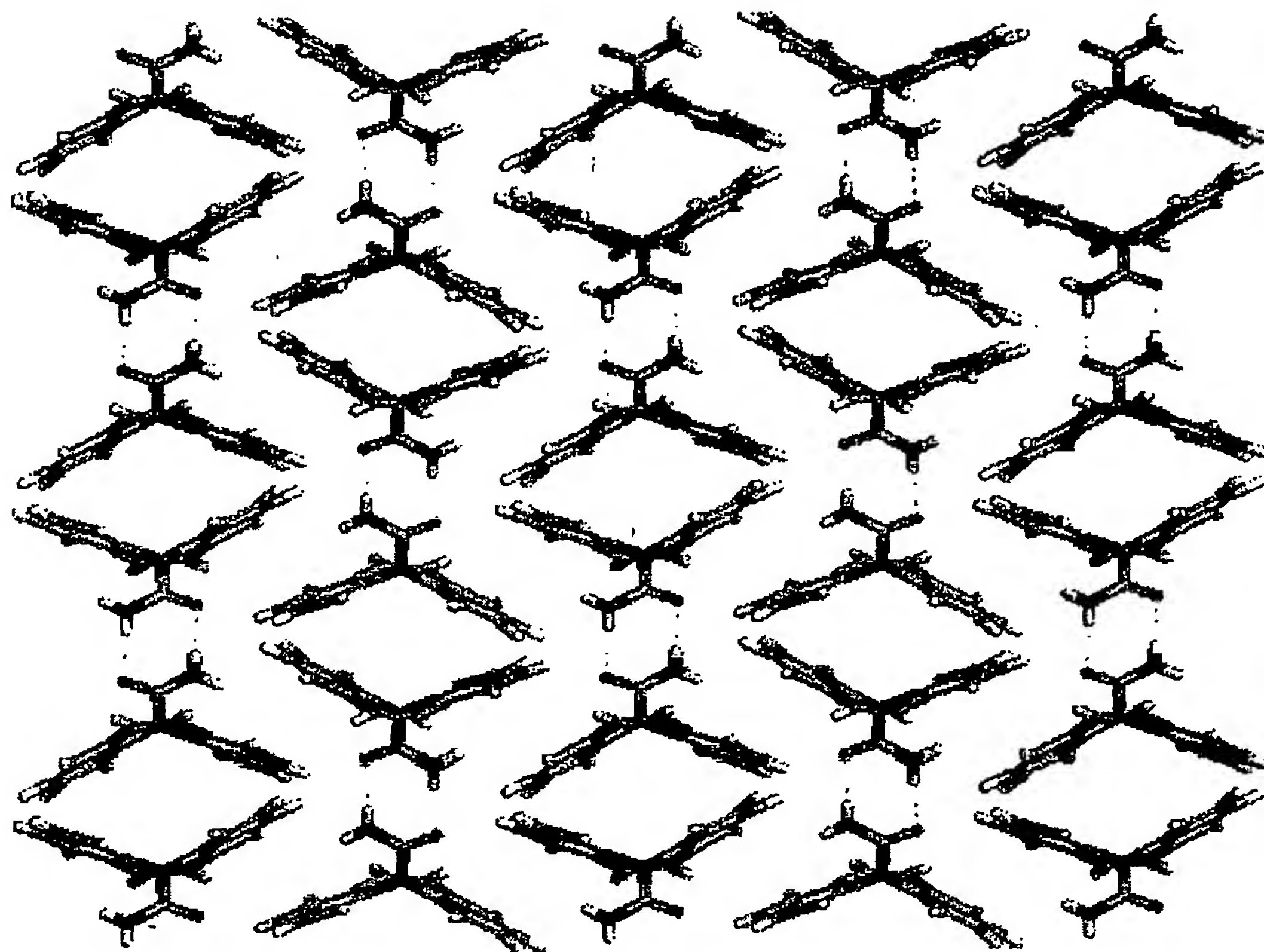


FIG. 44A

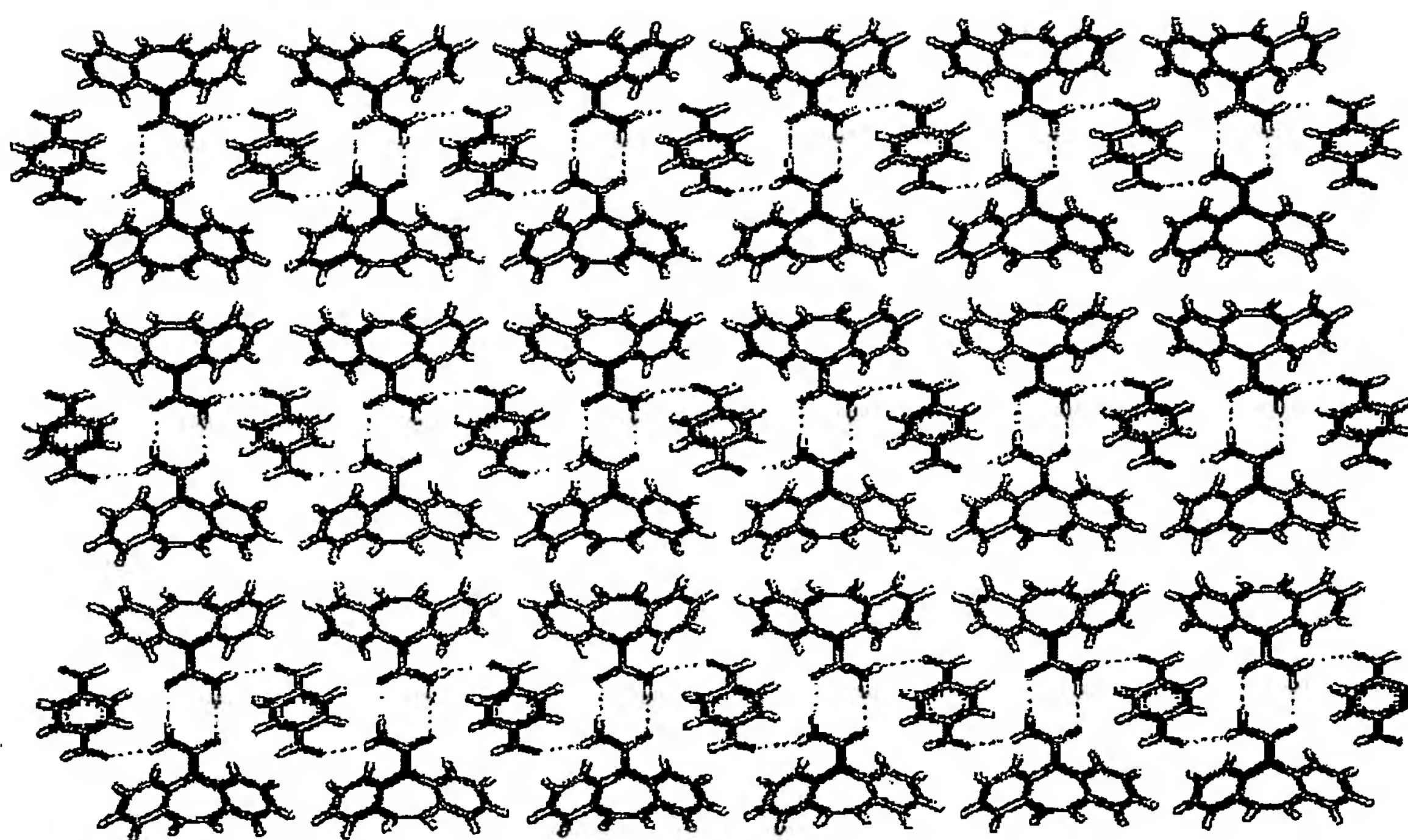


FIG. 44B

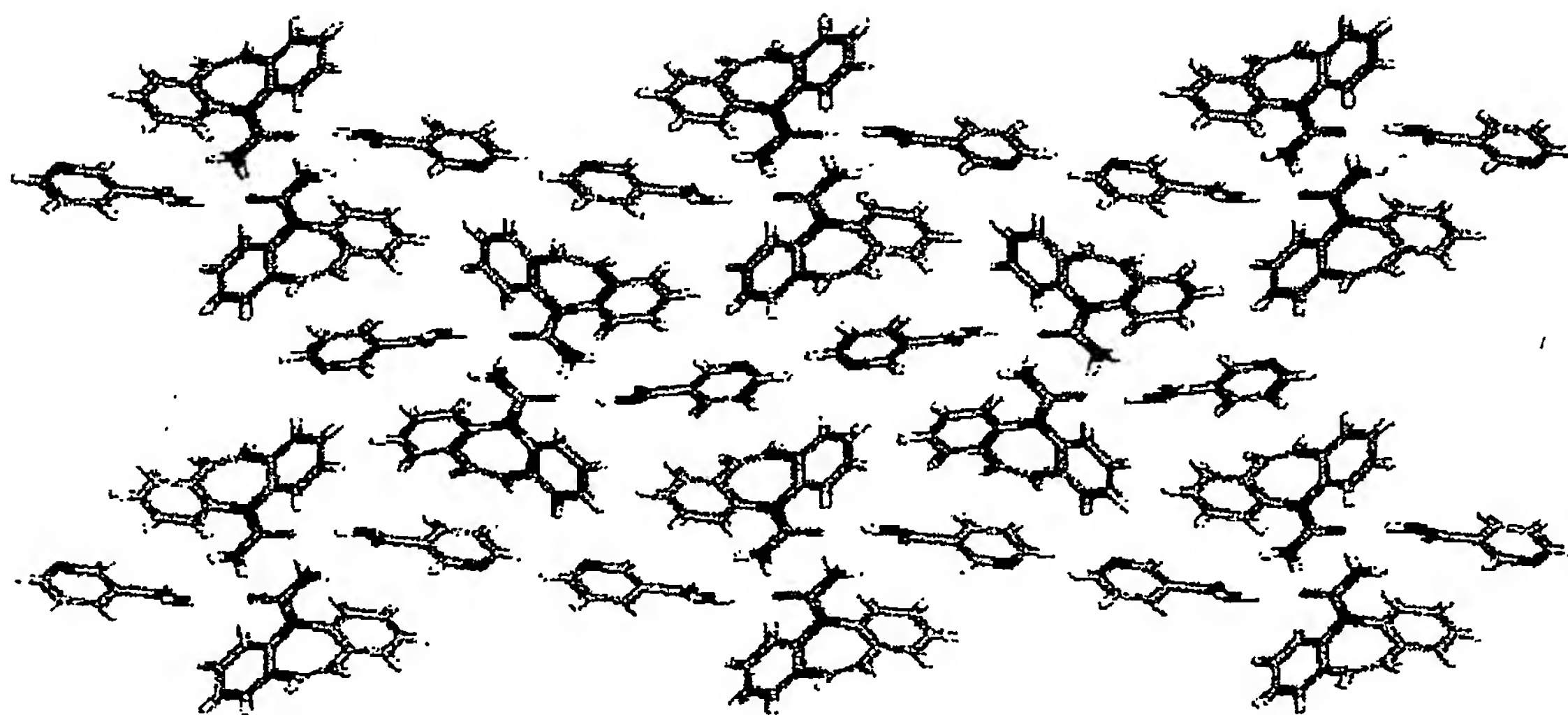


FIG. 45

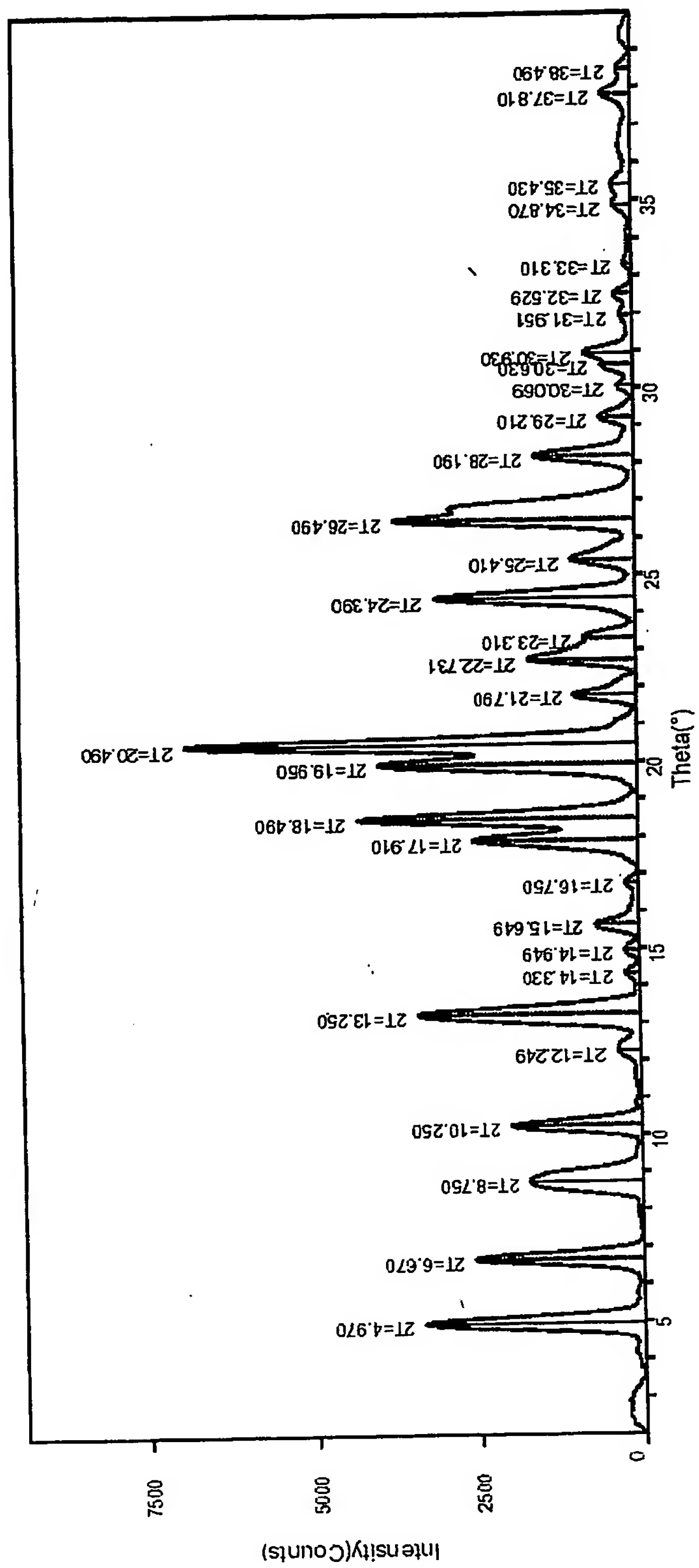


FIG. 46

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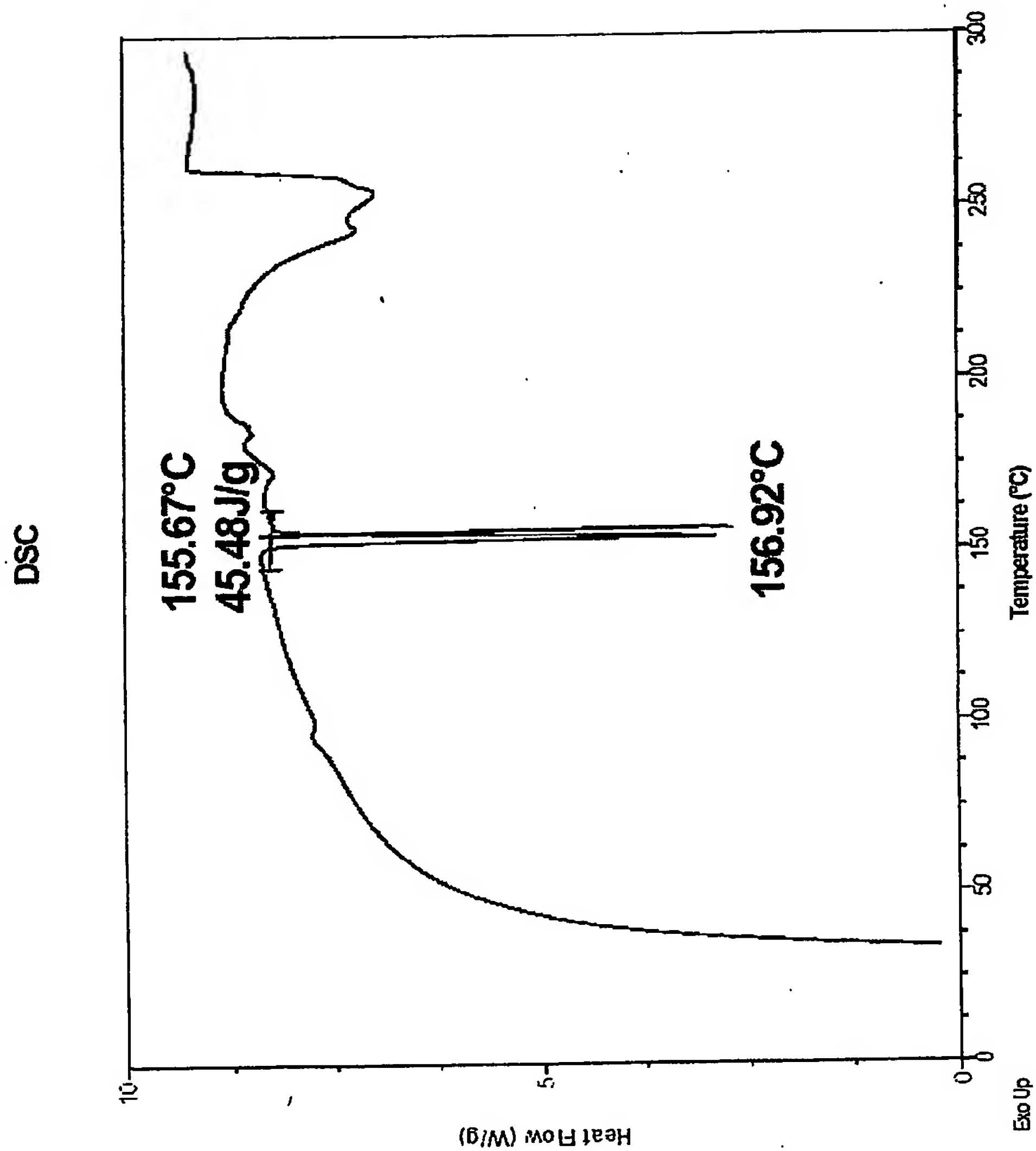


FIG. 47

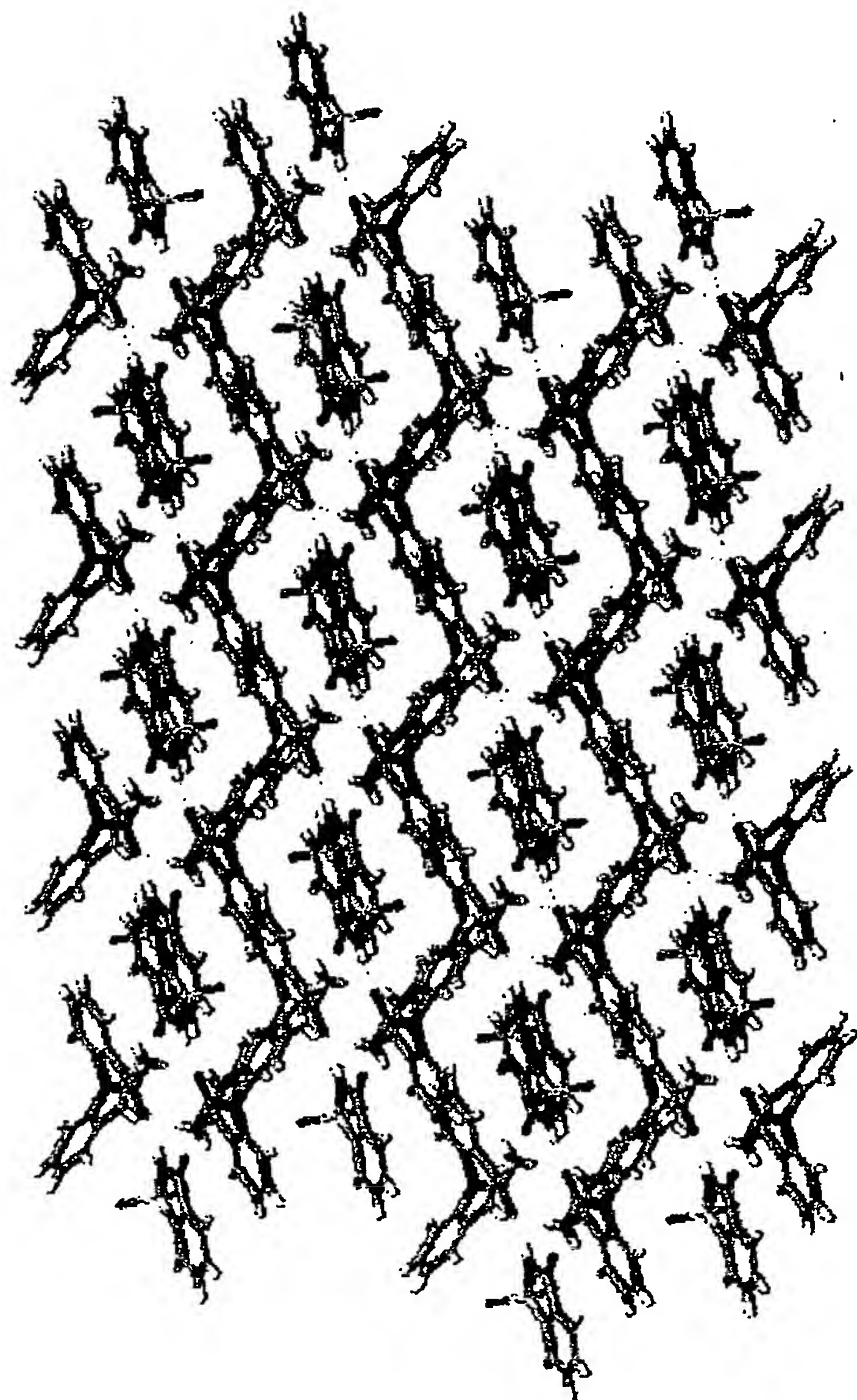


FIG. 48

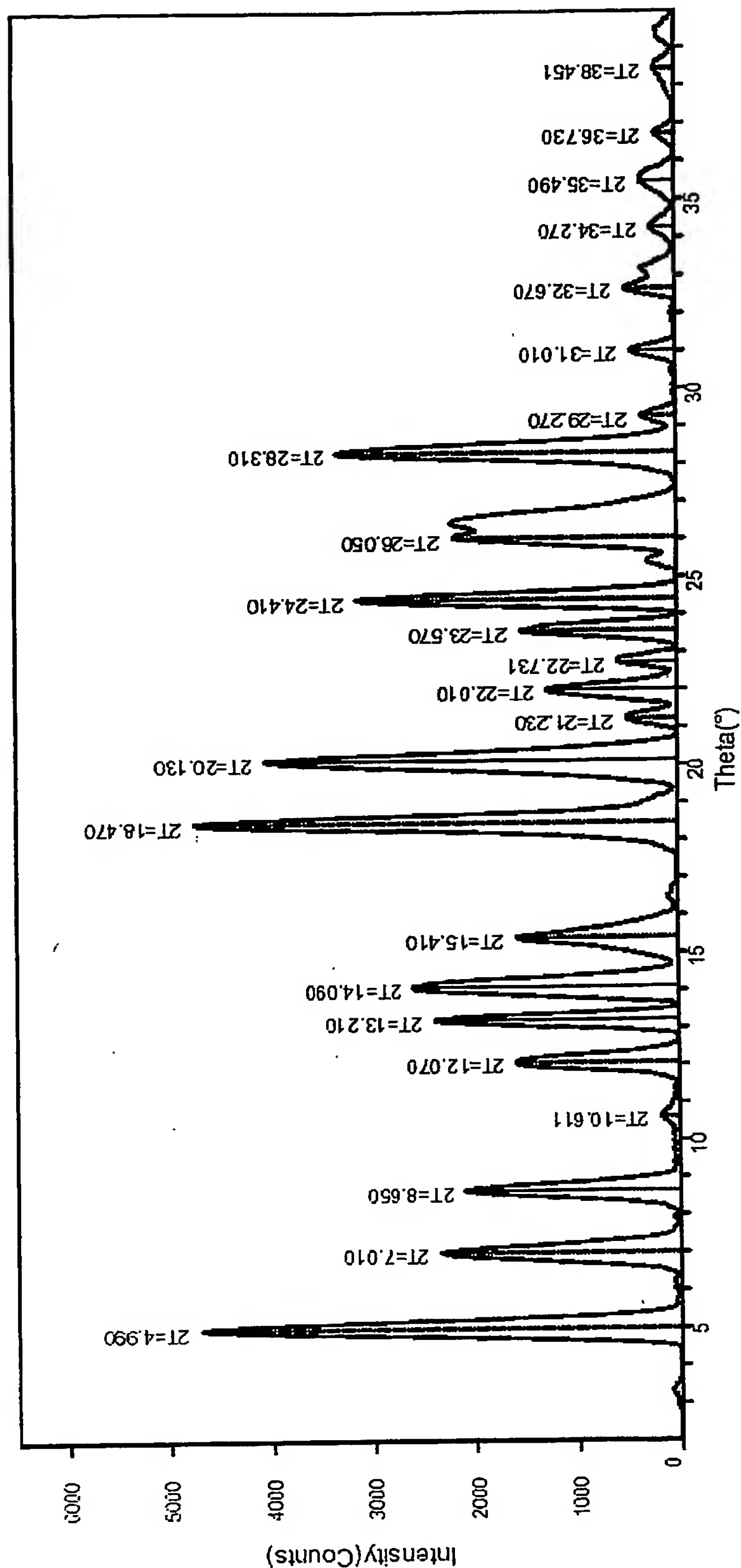


FIG. 49

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DSC

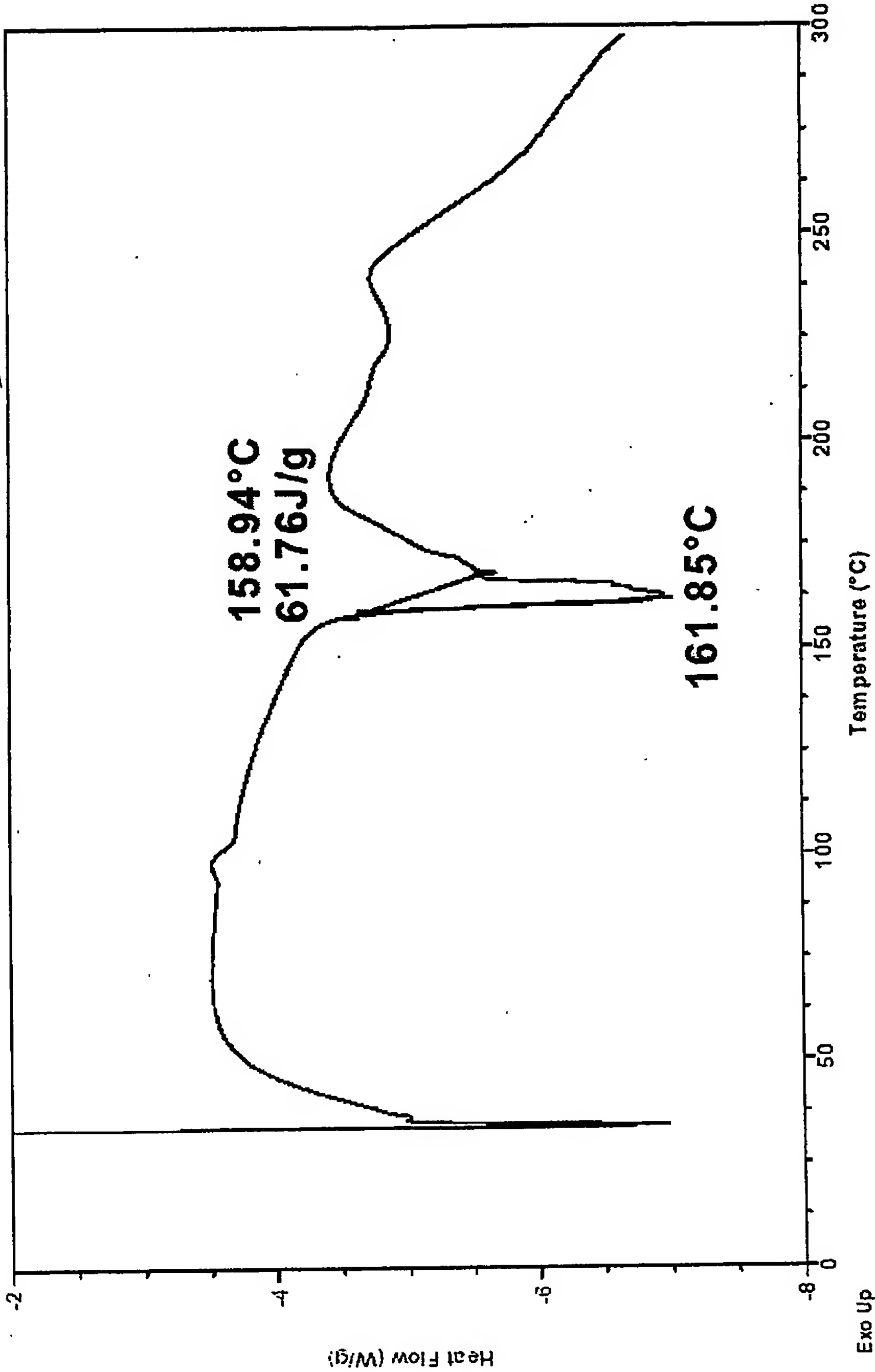


FIG. 50

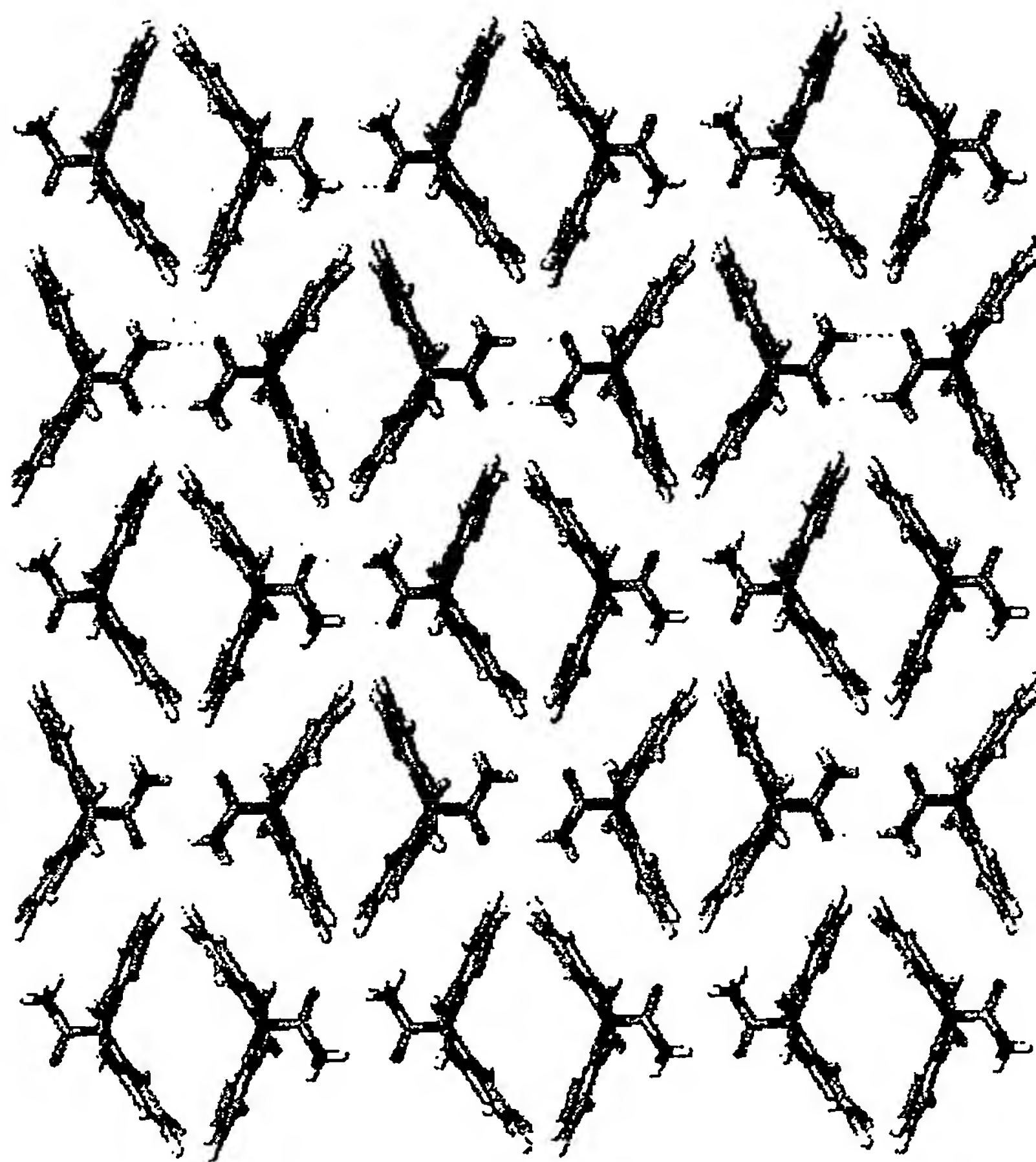


FIG. 51A

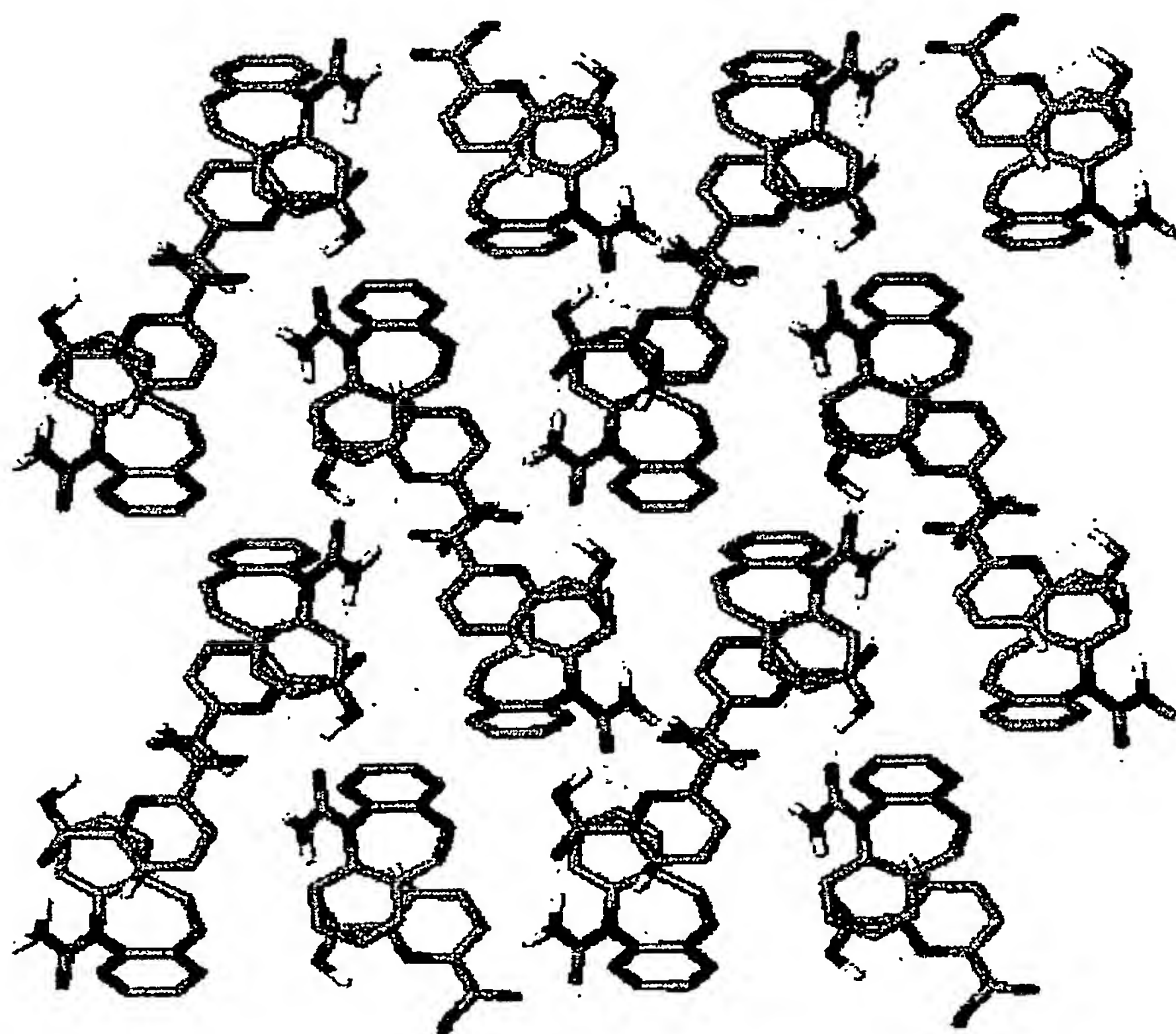


FIG. 51B

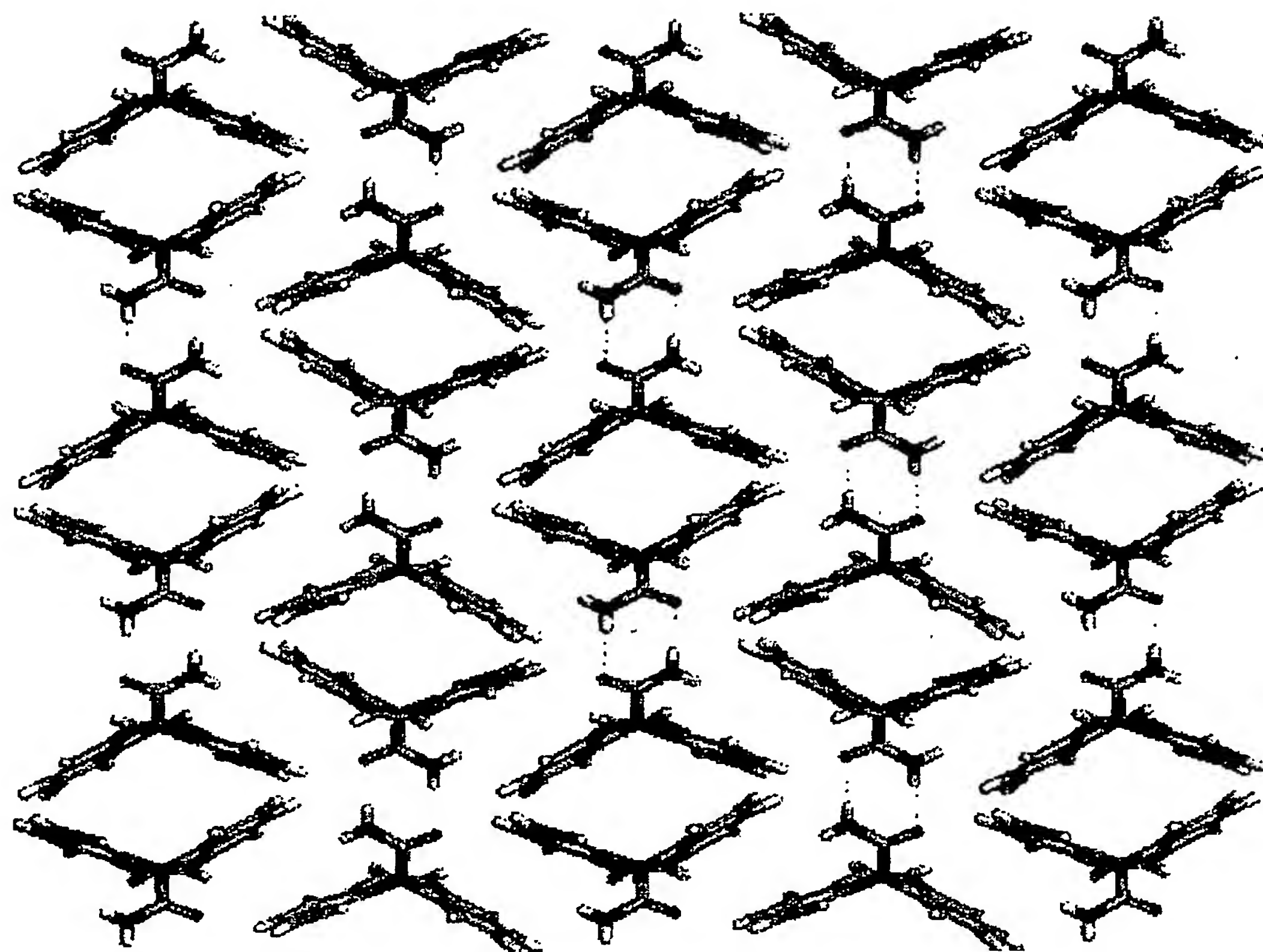


FIG. 52A

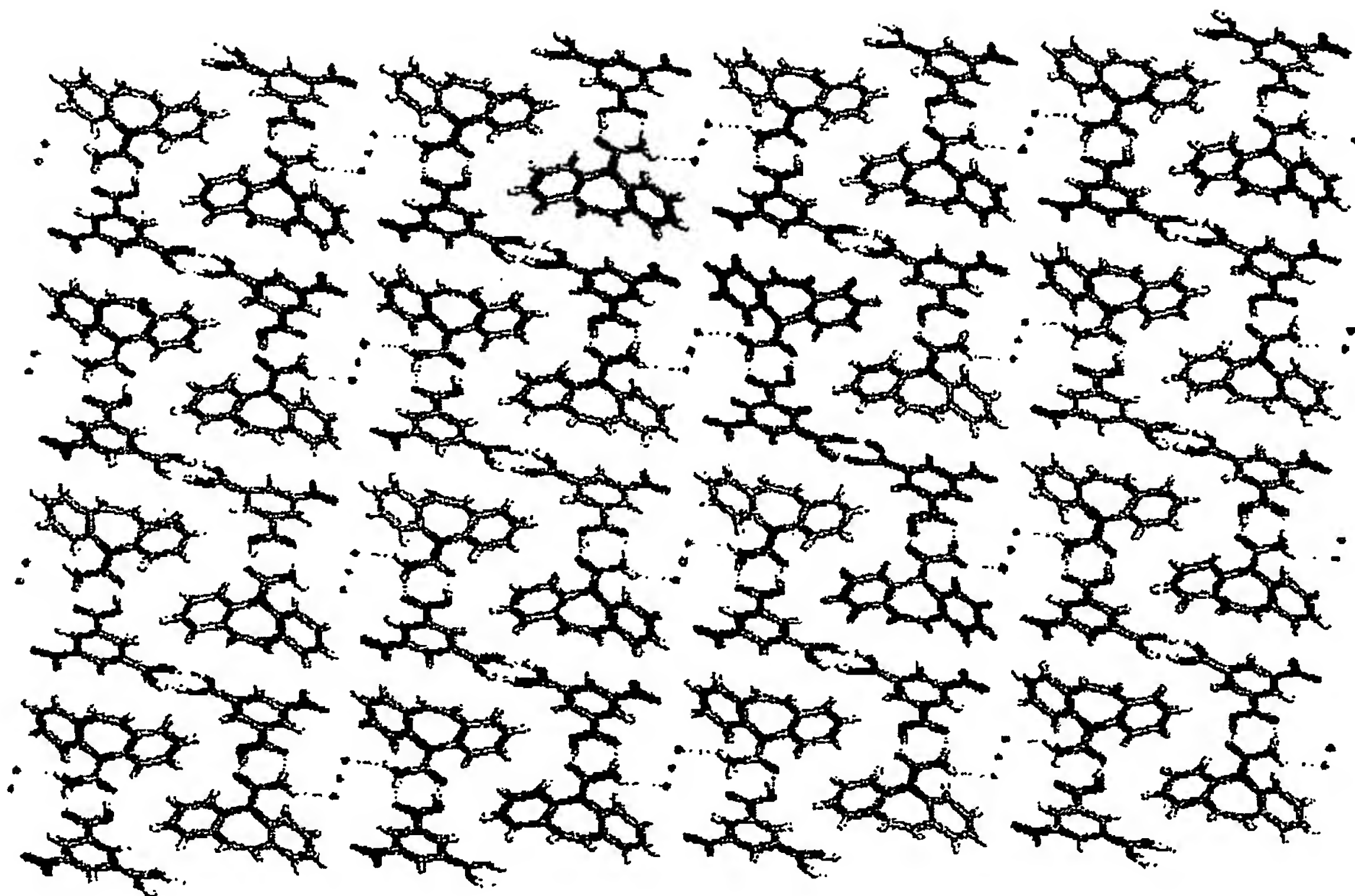


FIG. 52B

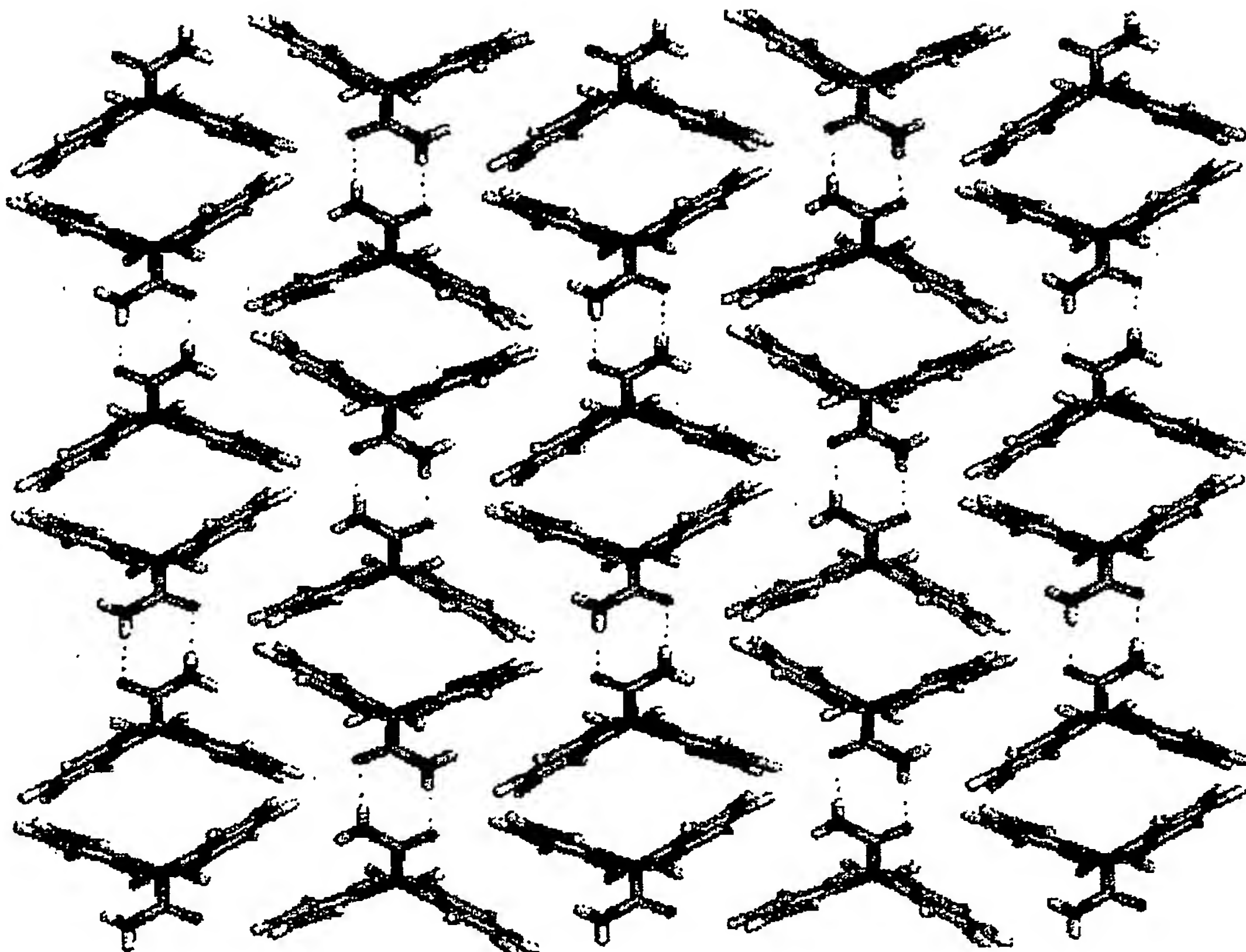


FIG. 53A

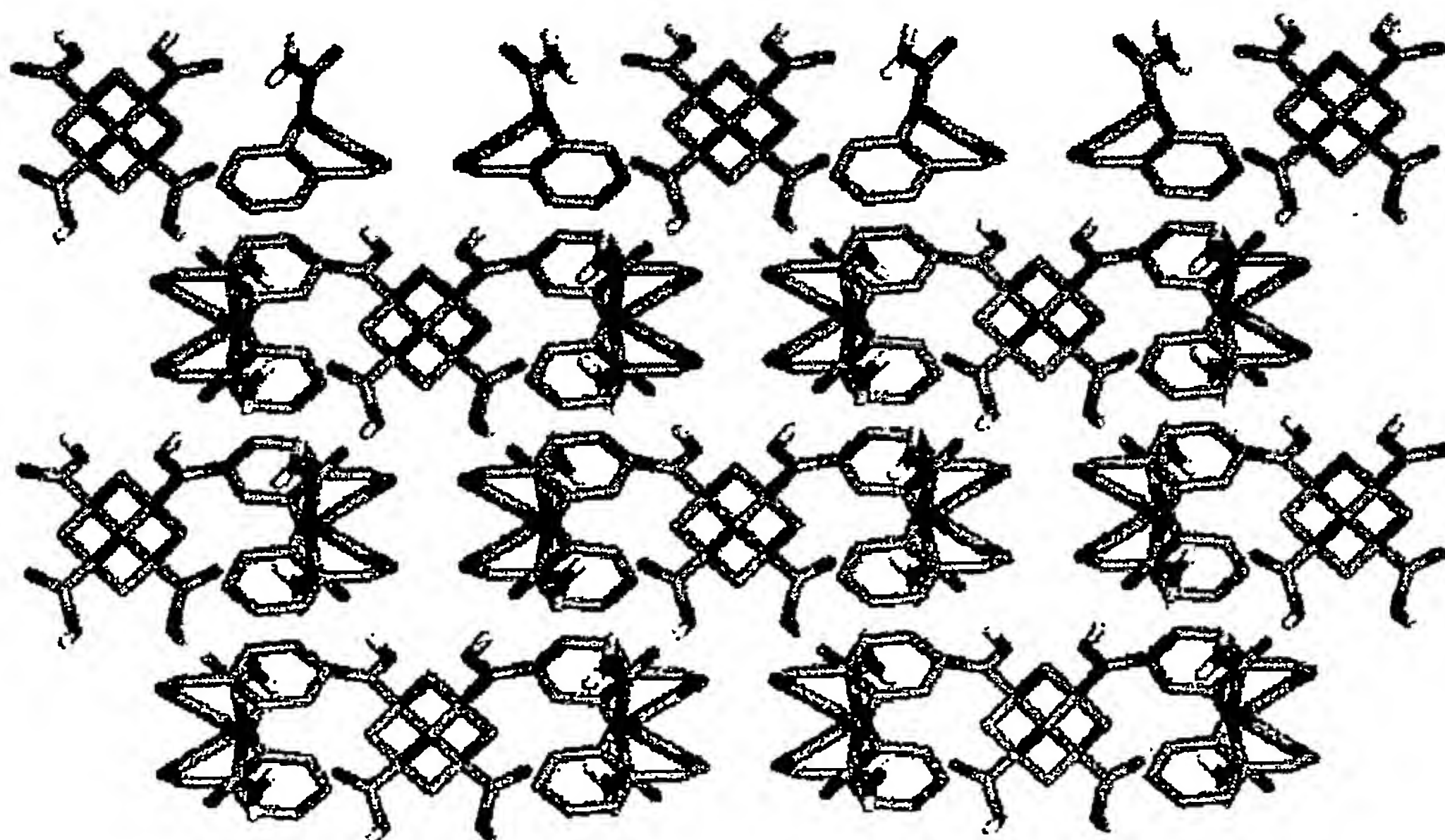


FIG. 53B



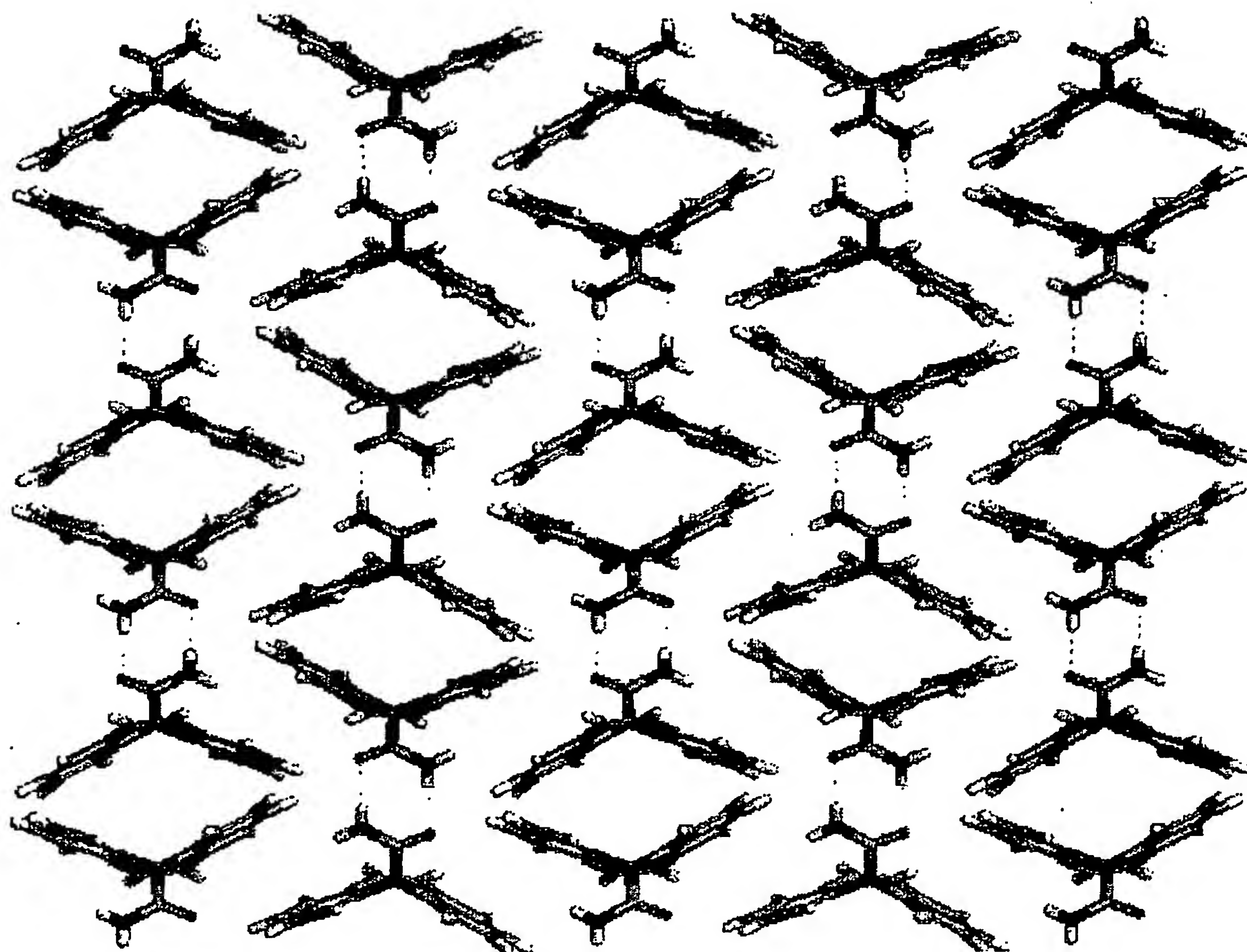


FIG. 54A

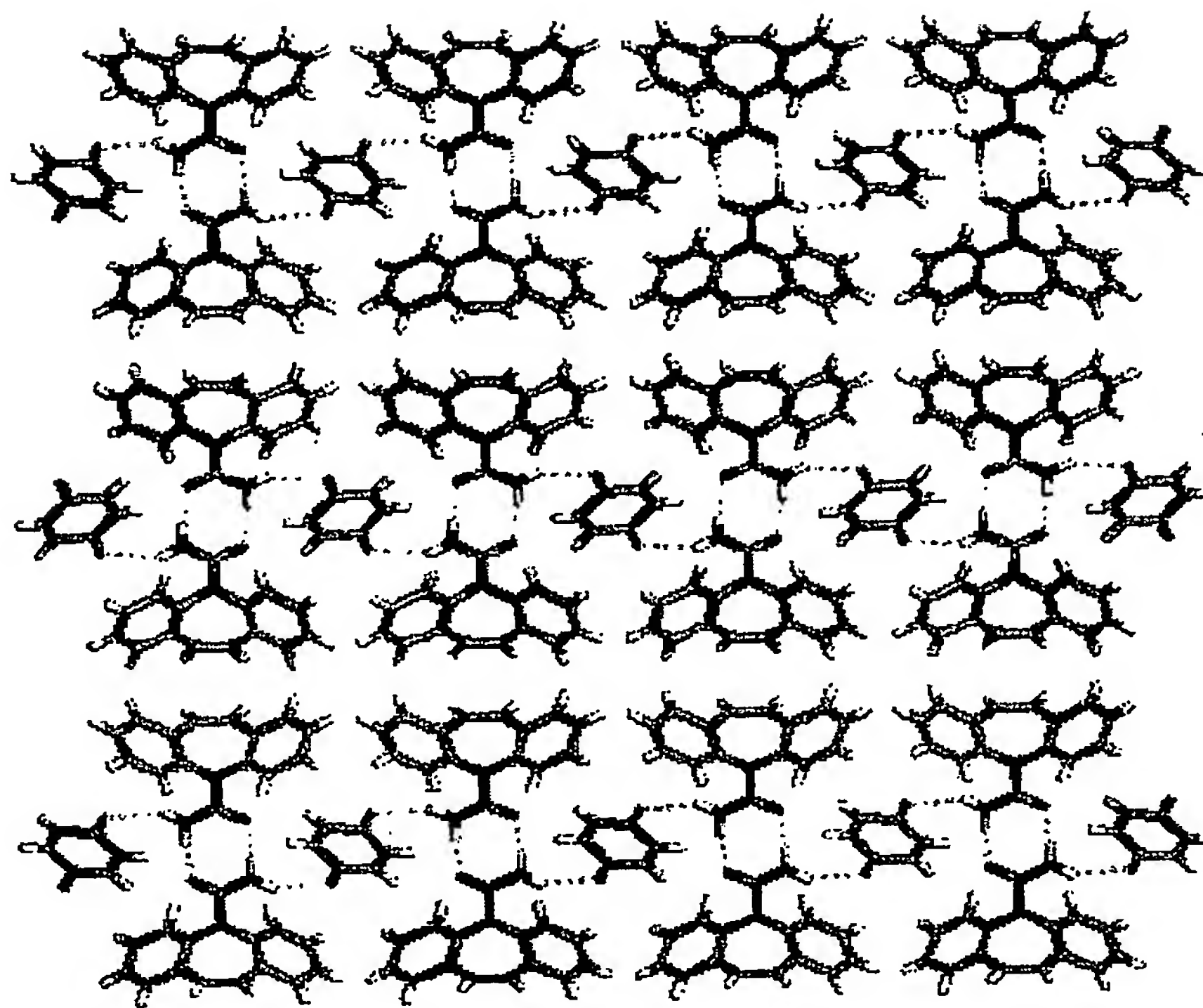


FIG. 54B

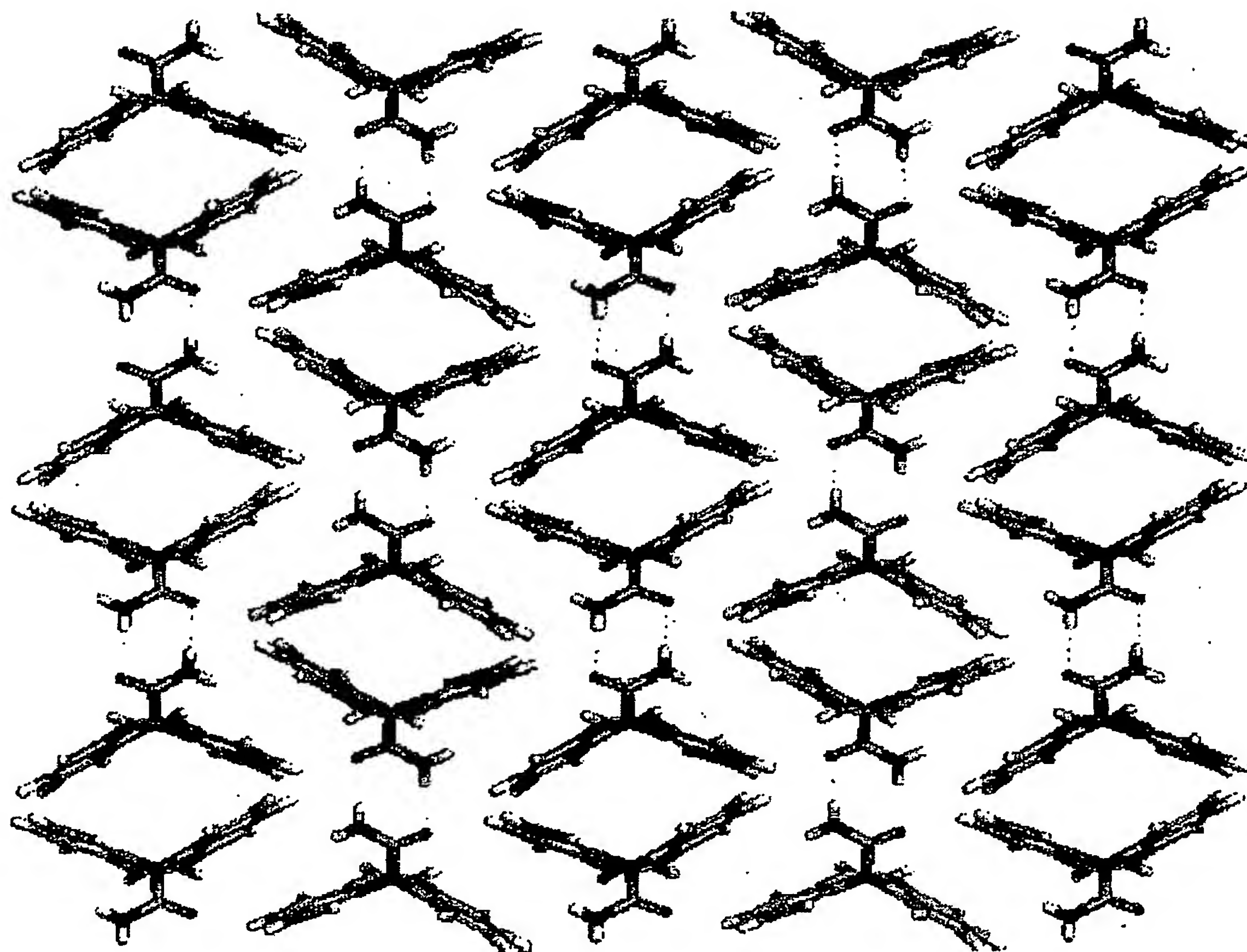


FIG. 55A

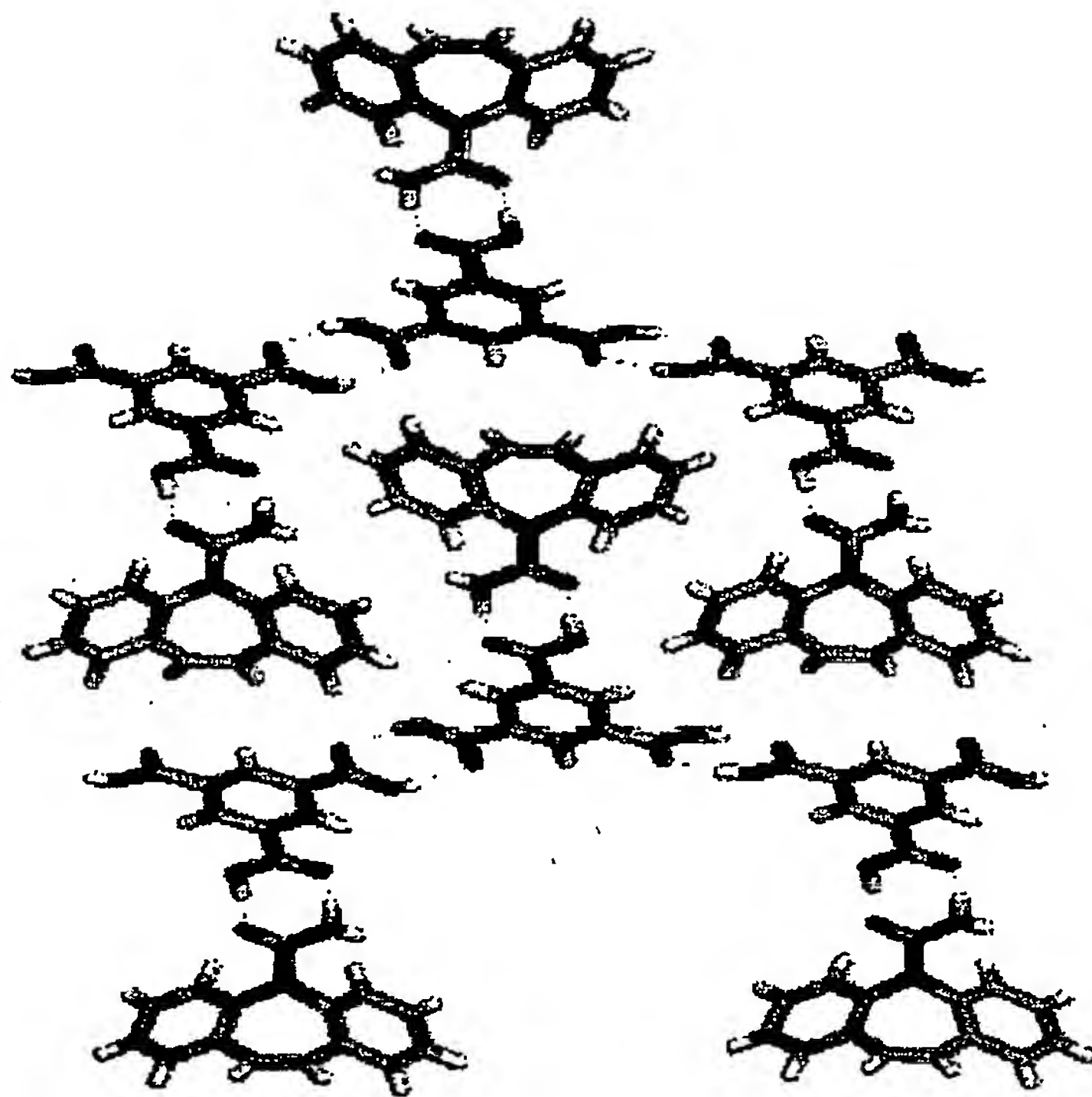


FIG. 55B

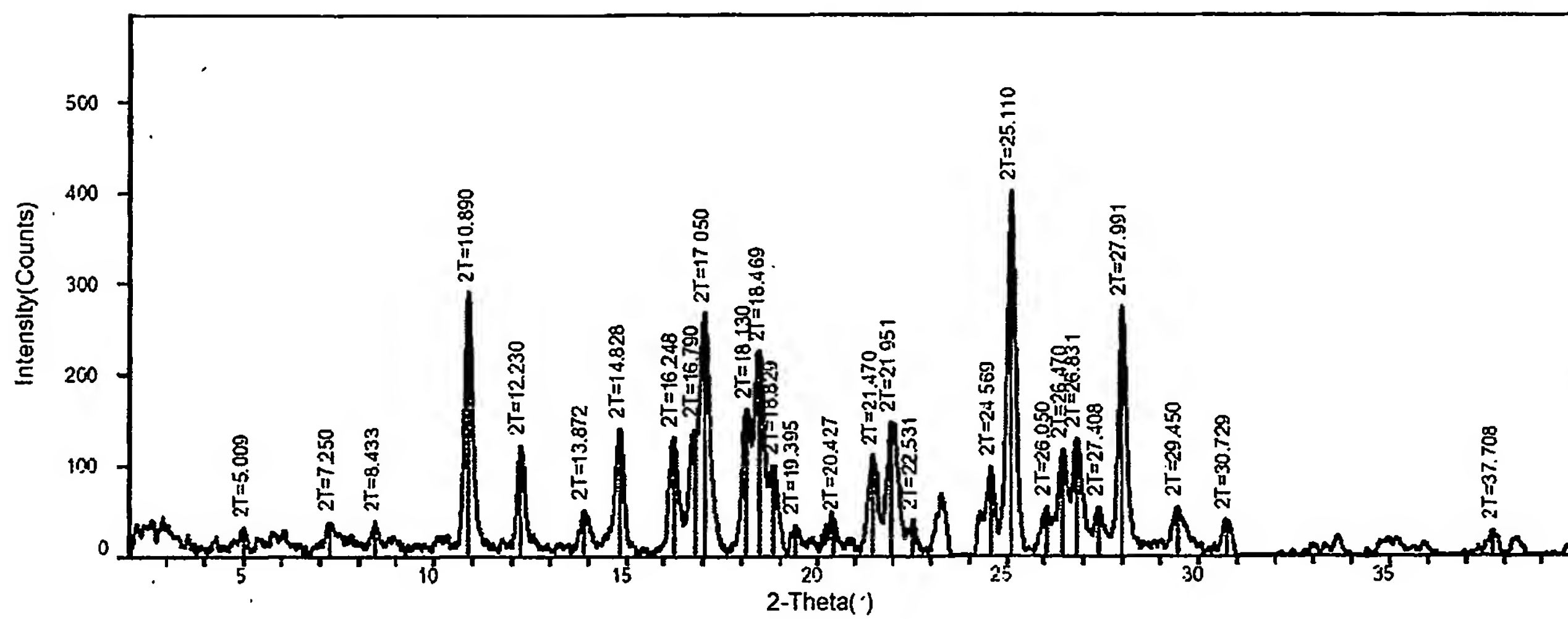


FIG. 56

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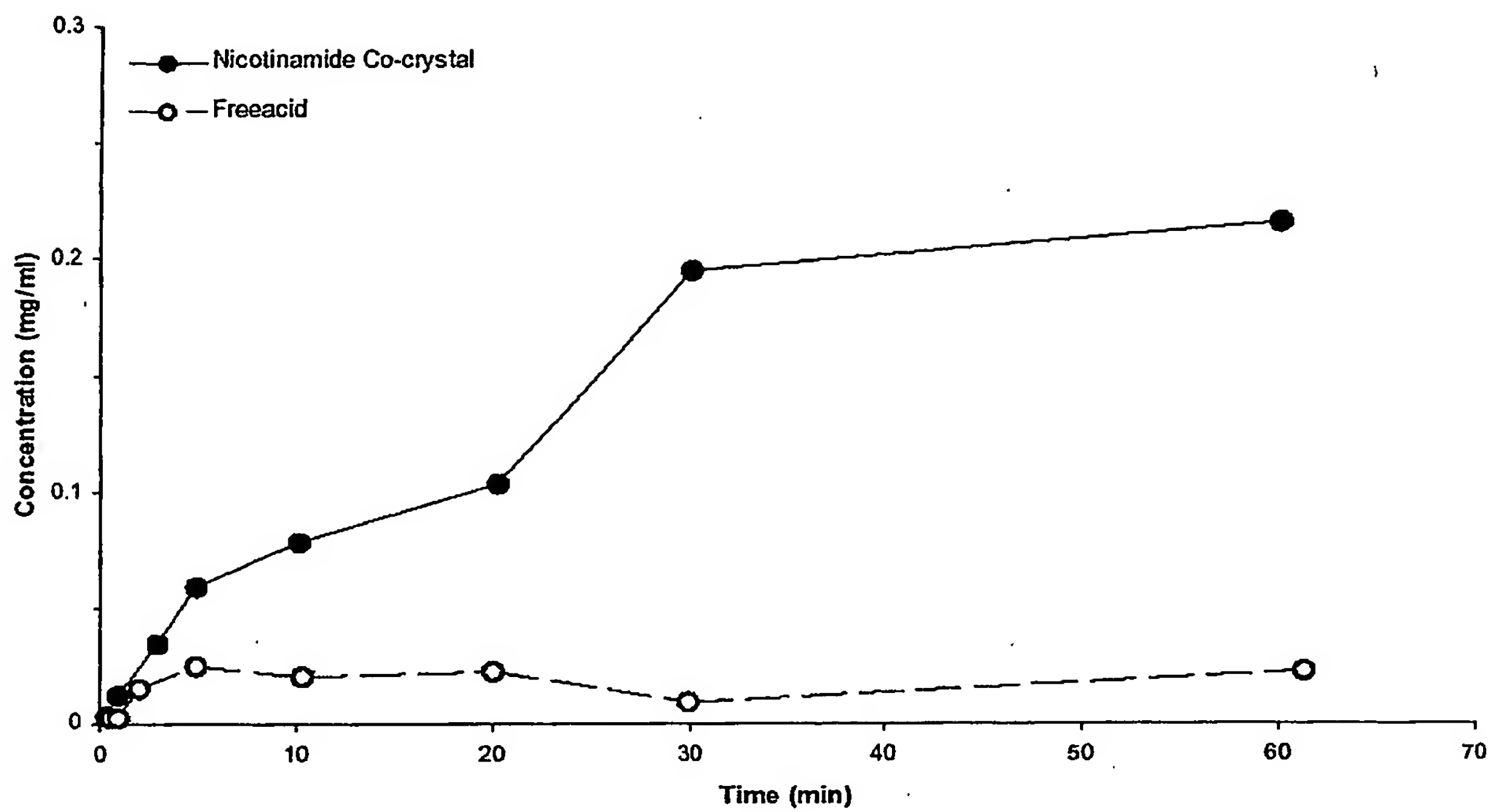
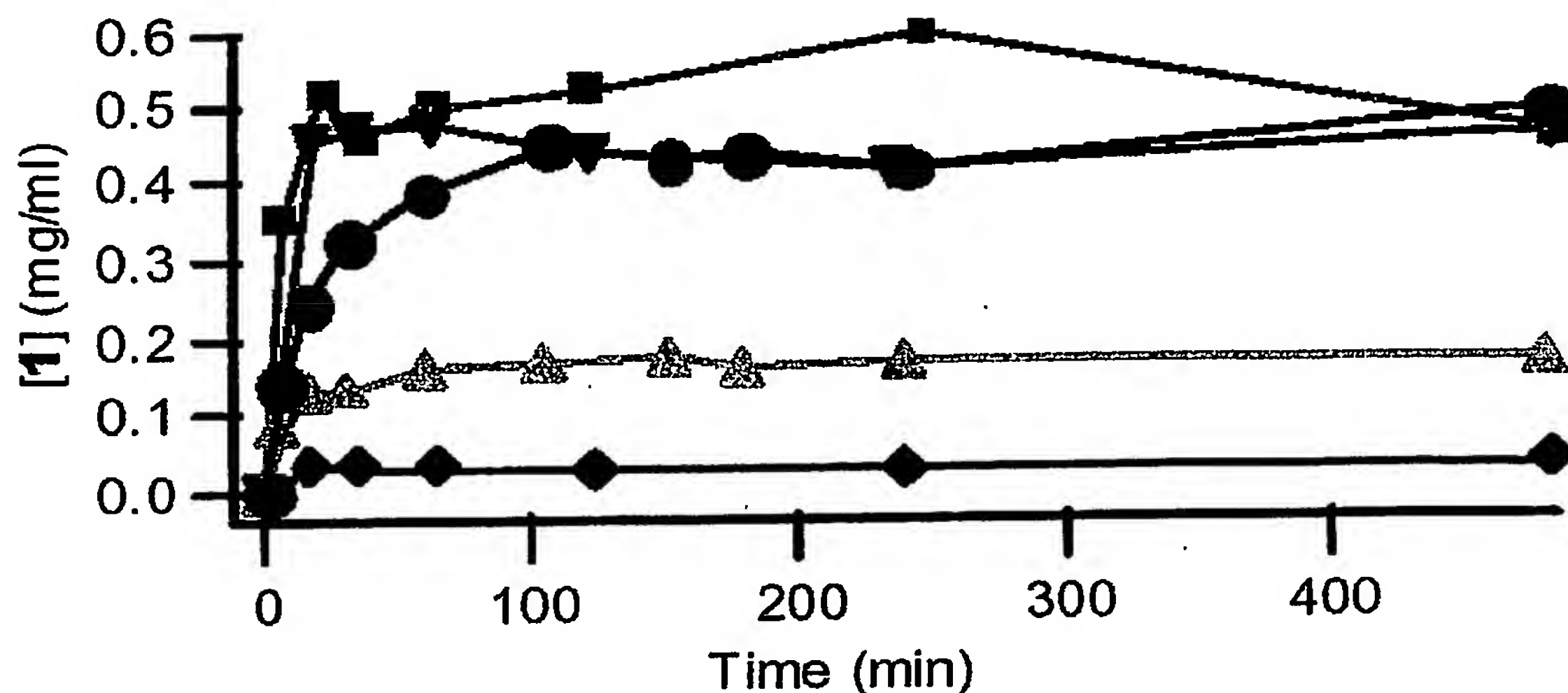


FIG. 57



**Dissolution profiles into 0.1 N HCl at 25 °C**  
**Sporanox Beads (amorphous freebase) (Rectangle)**  
**I-Malate (Inverted triangle)**  
**I-Tartrate (Oval)**  
**Succinate (Triangle)**  
**Crystalline Freebase (Diamond)**

FIG. 58

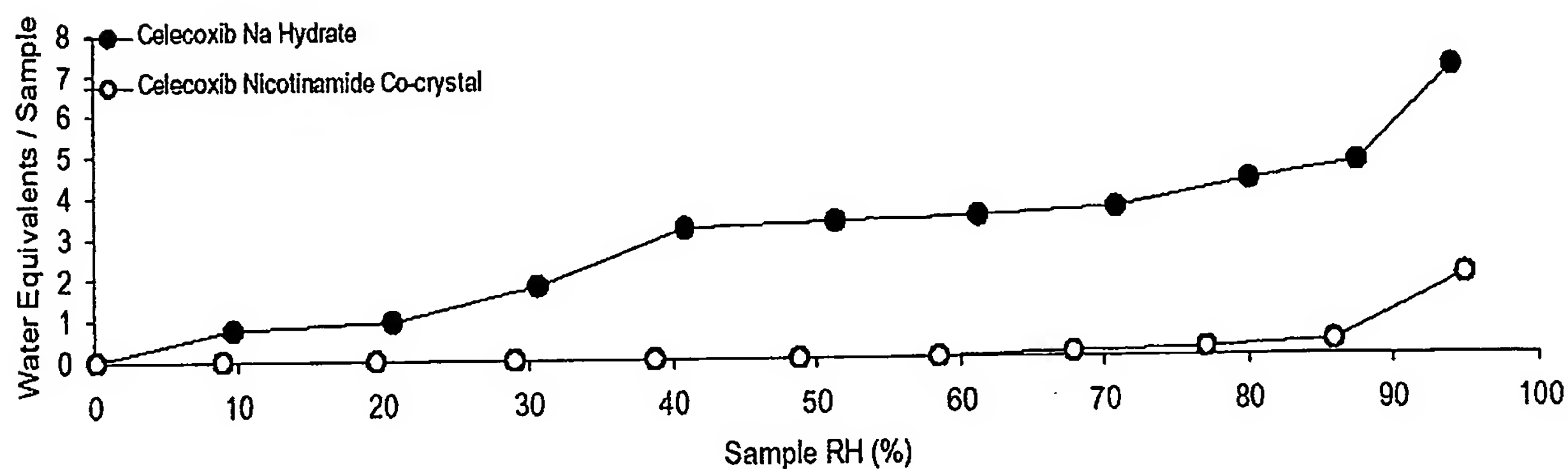
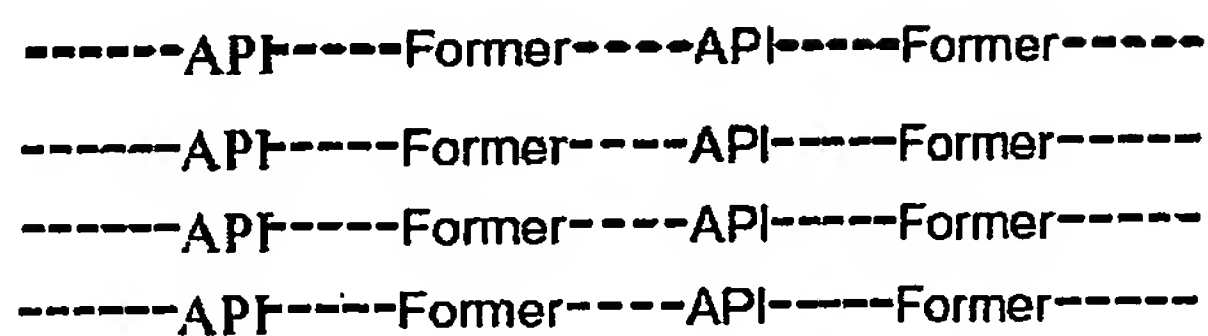


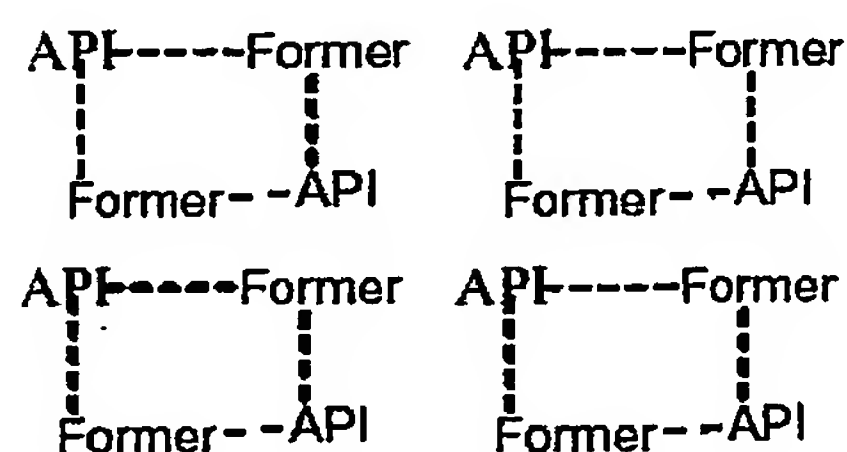
FIG. 59



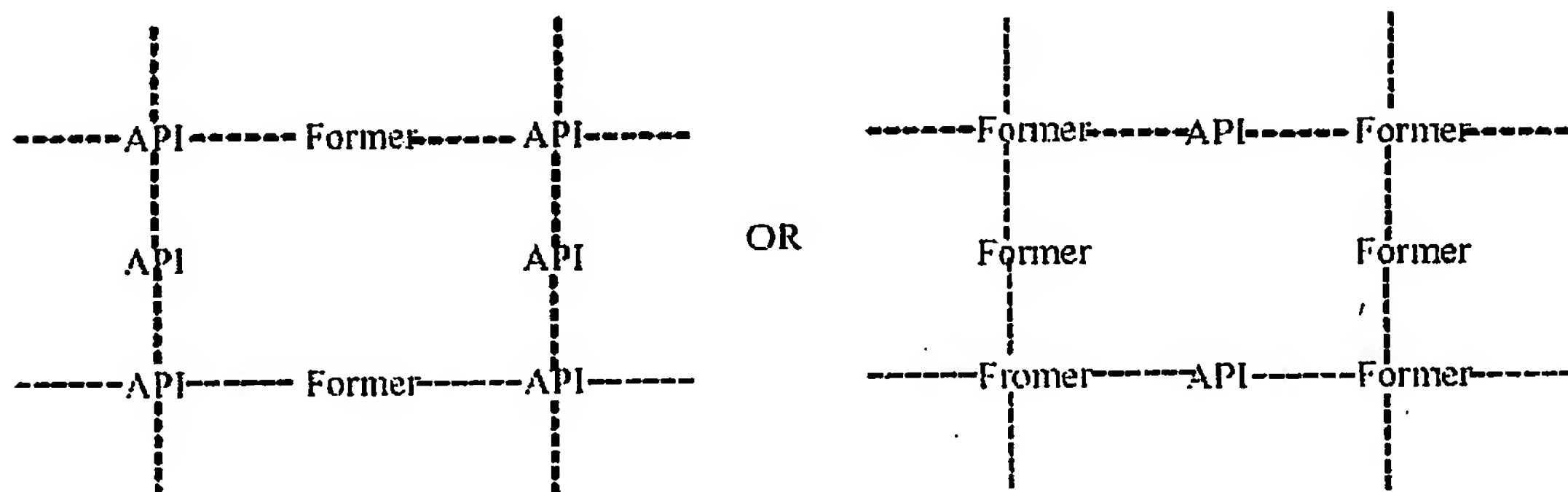
1. One-dimensional (linear) hydrogen-bonded chains:



2. Isolated rings:



3. Extended Networks:



4. Isolated triads:

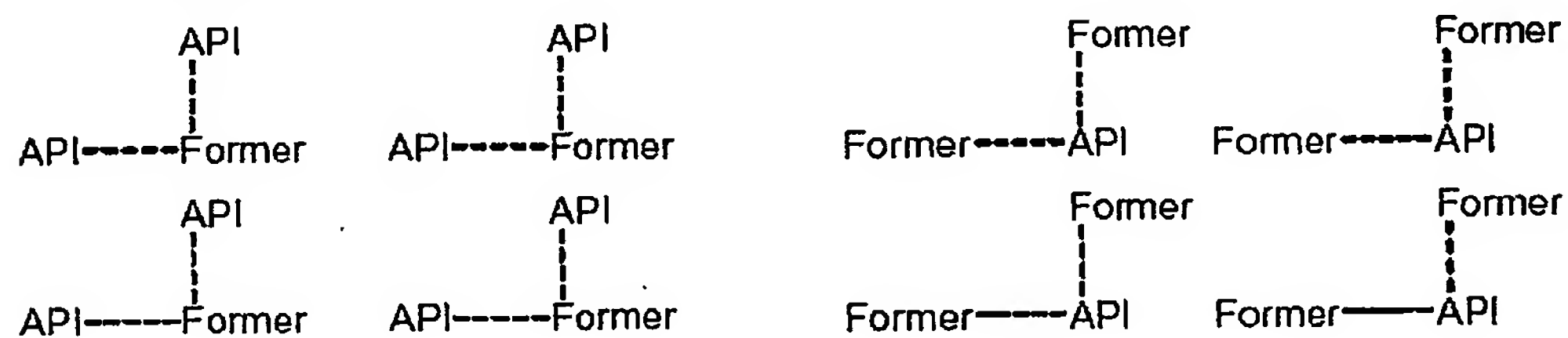


FIG. 60

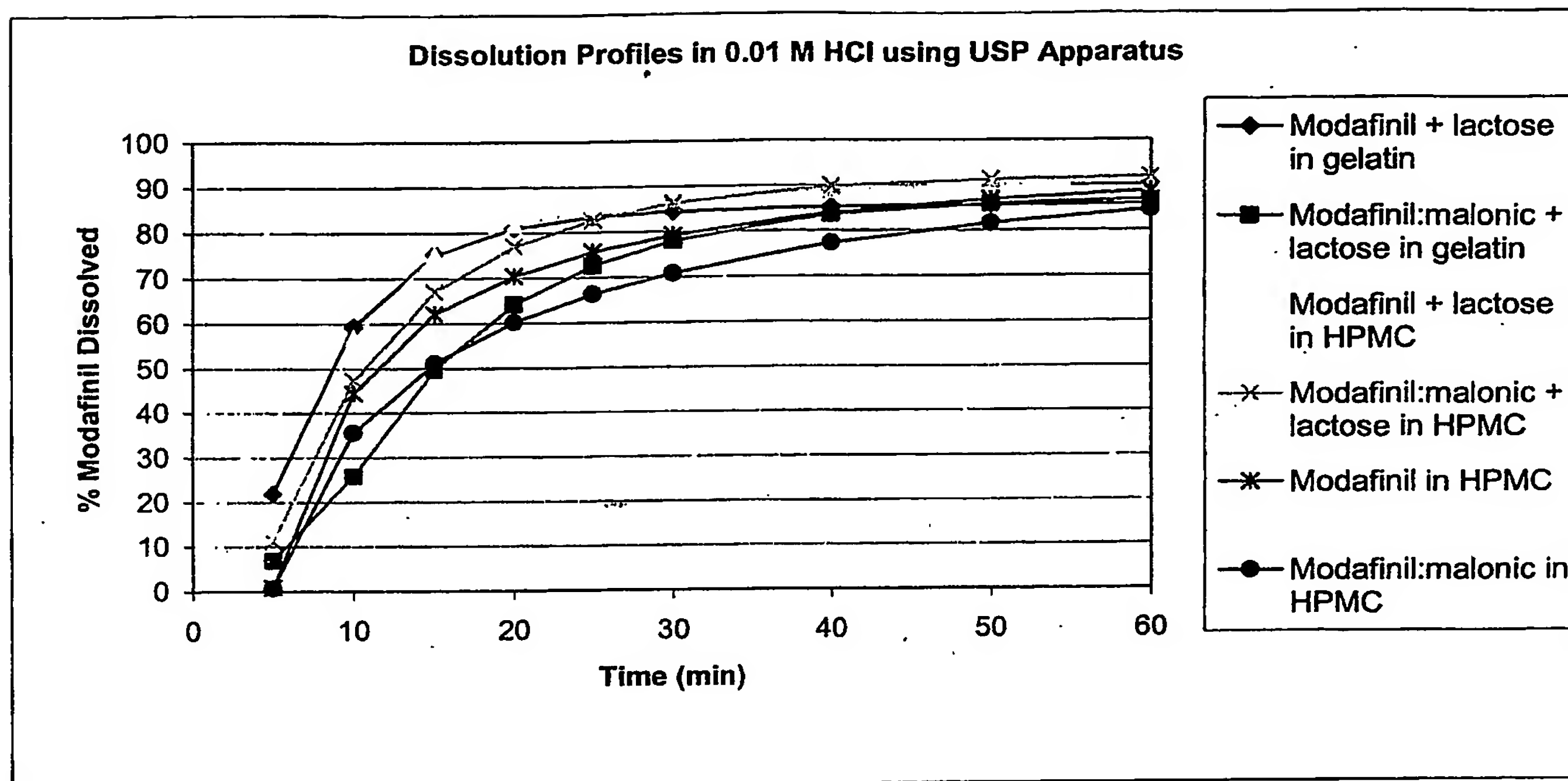


FIG. 61

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